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ABSTRACT

This book provides a comprehensive description of instructional development agencies and summarizes the proceedings of the Conference on Instructional Development Agencies in Higher Education held at Michigan State University in May 1971. Chapter I discusses the characteristics of instructional development agencies, including activities, administrative location, and budget and staff. Chapter II reports conference proceedings encompassing factors contributing to instructional problems, incentive programs for improving instruction, teaching instructional development, service programs, improving instructional development activities, and improving teaching procedures. The appendix presents a questionnaire to which the conference participants responded. The questionnaire responses are included. Although they may differ in format, each of the 16 responses cover the background and institutional climate, structure and function, and activities of their institution. (MJM)

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INSTRUCTIONAL DEVELOPMENT AGENCIES IN HIGHER EDUCATION

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INSTRUCTIONAL DEVELOPMENT AGENCIES IN HIGHER EDUCATION

Edited by
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Michigan State University
East Lansing, Michigan
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INSTRUCTIONAL DEVELOPMENT AGENCIES IN HIGHER EDUCATION

INTRODUCTION

During the past several years, in response to increasingly widespread dissatisfaction with the quality of undergraduate education, several colleges and universities have created a unique kind of agency whose function is to assist college faculty to improve their instruction. These agencies may vary in the scope of their activities from one institution to another, but they all have one goal in common: to contribute to the development of improved college instruction. Because of this common feature, and despite their different titles, in this report the editors refer to them collectively as instructional development agencies.

Instructional development agencies function as catalysts in affecting change. Their staffs consist mainly of behavioral scientists who work closely with faculty members. They assist faculty in analyzing and solving instructional problems. They help faculty apply principles of learning and motivation to the planning and practice of instruction. They conduct research studies of teaching and learning processes and help faculty to develop improved instructional procedures by applying the results of these studies. Thus, instructional development agencies seek to contribute to the improvement of undergraduate education by raising the instructional capabilities of individual faculty members.

Several colleges and universities, both in the United States and abroad, have expressed interest in organizing instructional development agencies and are actively seeking information on how to proceed. But as yet such information exists in scattered form and is not generally available. Consequently, there is a real need to provide a comprehensive description of these agencies. To satisfy this need is one of the purposes of this book.

The second purpose is to summarize the proceedings of a conference held at Michigan State University in May 1971. This conference was attended by representatives of instructional development agencies from sixteen colleges and universities throughout the United States and Canada. The conference was organized to enable the participants to discuss mutual problems, share experiences, and explore means for increasing the effectiveness of their operations.

In writing this report, the editors had two audiences in mind. The first were those faculty members and administrators who might be interested in supporting the introduction of an instructional development agency at their own institution. For this audience the editors have prepared an appendix which includes detailed descriptions of all the agencies represented at the conference. Each appendix paper was written by the participants in response to a preconference questionnaire. In addition, in the second section of this report, the editors have summarized some of the salient characteristics of all the agencies. The summary and the appendix should provide sufficient information about the structure and operations of instructional development agencies.

The second group for whom this report was written was the participants themselves. The editors have assumed that its primary function was to provide cues to assist the participants in recalling the actual discussions that ensued. Consequently, in the third section of this report, the editors summarized (1) the problems that were discussed, (2) the procedures that various agencies currently employ in attacking and solving these problems, and (3) alternative procedures that were proposed.

CHARACTERISTICS OF INSTRUCTIONAL DEVELOPMENT AGENCIES

This section of the report summarizes the characteristics of those instructional development agencies represented at the conference. The result will be a composite picture of activities, sources of funding, budgets, and staffs. The unique characteristics of each agency will be described in detail in the appendix.

Although sixteen institutions were represented at the conference, data on all were not available for inclusion in this report.

Activities of Instructional Development Agencies (IDA)

Instructional development agencies seek to influence and improve college teaching through three kinds of activities: service, research, and teaching.

Service activities include consulting with individual faculty members on instructional problems, conducting faculty seminars and workshops on the theory and practice of learning and teaching, and assisting faculty members to conduct instructional development projects. Research activities are directed toward increasing basic knowledge about teaching and learning processes and toward developing more efficient instructional programs. The teaching function refers to courses conducted by IDA staffs for undergraduate and graduate students.

Although most instructional development agencies represented at the conference performed all three functions, the distribution of their efforts varied. Table I shows the average proportion of time spent in each type of activity and the range of time spent by all of the participating agencies.

TABLE I

AVERAGE TIME SPENT IN I.D. ACTIVITIES (N = 14)

Category	Average Proportion of Time Spent (Percent)	Range of Time Spent (Percent)
Administration	9.5	5 - 20
Teaching	14.8	0 - 33
R & D	33.5	15 - 70
Service	41.7	20 - 75

Note: The service category includes all courses, seminars, workshops, and consultative activities where the target population is the college faculty or the professional staffs of community institutions outside the college; e.g., hospitals, schools, urban agencies. The teaching category refers to courses conducted by IDA staff members in their professional areas of competence; e.g., psychology of learning, computer-aided instruction, statistics and research design, educational media, and technology. The target populations in this category are undergraduate or graduate students.

Most of the participants judged their agency to be primarily service-oriented, and the data in Table I reflects this orientation. The large ranges in the research and development and service categories are due to the fact that one or two agencies were distinctly oriented toward research and the publication of scholarly papers.

Table II lists specific projects conducted by instructional development agencies. The projects are subsumed under each of the three major activity categories. The list in Table II emphasizes the fact that most IDA projects are derived directly from immediately evident instructional problems.

TABLE II

TYPICAL ACTIVITIES OF FOURTEEN INSTRUCTIONAL DEVELOPMENT AGENCIES

(Numbers in parentheses refer to number of agencies reporting the activity.)

A. Service

1. Conduct faculty workshops, seminars, institutes, and training programs on learning, instruction, and associated topics. (8)
2. Assist departments in analysis, planning, and design of curricula. (7)
3. Assist faculty to develop instructional materials. (7)
4. Internal publications: handbooks, project reports, and notes on instructional development topics. (7)
5. Consult with individual faculty members. (5)
6. Provide test scoring and analysis services. (5)
7. Provide instructional TV services. (5)
8. Administer and score standard tests (admission, placement, etc.). (5)
9. Provide media equipment (store, repair, and distribute). (4)
10. Maintain reference library on instructional development topics in higher education. (4)
11. Advise and assist community agencies outside university (schools, colleges, hospitals, UNESCO, and WHO) (4)
12. Maintain laboratories for faculty research and development in instruction. (3)
13. Provide administration with technical advisory services, re: instructional development. (3)

B. Research and Development

1. Learning system design: instructional models, materials, and procedures. (14)
2. Instructional programs: underprivileged students, honors students, foreign language students, simulation and gaming, and professional curricula (medicine, law, and pharmacy). (14)
3. Instructional evaluation. (8)
4. Training programs for faculty and teaching assistants. (5)
5. Individualized instruction, independent learning, computer-aided instruction, and programmed instruction. (5)
6. Educational tests and measurements. (4)
7. Impact of college on student development; recruitment. (3)
8. Organizational planning and governance. (2)
9. Cost benefit analysis of instructional systems. (1)
10. Instructional applications of media. (1)

C. **Courses Taught**

1. Instructional design and technology. (8)
2. Educational Psychology. (6)
3. Statistics and research design. (3)
4. AV Media. (3)

Administrative Location

Instructional development agencies can have most influence upon instruction if they are located where they can have an impact upon the largest number of faculty members. It is not surprising, therefore, that of the fourteen agencies represented at the conference for which data are available, nine were located in the central administration of their university. The directors of these agencies reported directly to the highest academic officer, the provost, chancellor, or vice-president for academic affairs. Table III summarizes the administrative location of the fourteen agencies.

TABLE III
ADMINISTRATIVE LOCATION OF
INSTRUCTIONAL DEVELOPMENT AGENCIES (N = 14)

Location	Number
Central Administration of University	9
Independent Center	1
Professional School (Medical or Pharmaceutical)	2
Psychology Department	1
College of Education	1

Because it was organized to provide instructional development services for a group of colleges, one agency was set up as an independent center reporting directly to the legislature.

Two agencies were located in newly organized professional colleges within their respective universities. In both cases, they were located in the central administration of the college. In only two cases were instructional development agencies located within an academic department or college.

There are several advantages to be gained from placing an instructional development agency in an administratively central location. One has already been mentioned, that is, to ensure a widespread impact. Another advantage is that, in a central location, the agency activities may be directed at all-university problems rather than at serving parochial needs. A third advantage is that a central location makes instructional development agencies relatively immune from budgetary incursions.

Budget and Staff

There is a wide variation in the annual budgets of the instructional development agencies represented at the conference. As might be expected, budget size was directly related to staff size and consequently to the number and variety of instructional activities that could be supported.

Table IV summarizes the relationship between budget and staff size.

TABLE IV

ANNUAL BUDGETS (1970-1971) AND STAFFS OF 14 INSTRUCTIONAL DEVELOPMENT AGENCIES

Budget (thousands of dollars)	Agencies	Professional Staff (FTE) Range	Median	Total Staff Range	Median
less than 200	5	1—6	3	2—17	6
200 — 399	3	2—27	6	5—30	27
400 — 599	2	7—9	—	38—45	—
600 or more	2	10—65	—	94—95	—
No data	2				

Five agencies disbursed additional funds as grants to faculty engaged in instructional development projects. These funds are not included in the table.

The sources of funds for IDA budgets are summarized in Table V.

TABLE V

INSTRUCTIONAL DEVELOPMENT AGENCIES' SOURCES OF FUNDS

Source	Number
University General Fund	5
Grant	3
Combination of General Fund and Grant	3
State Budget Line Item	2
No Data	1

Instructional development agencies are staffed by professional, technical, and clerical personnel and by students working as research assistants. Many professional staff members have joint appointments in academic departments. In those cases, the proportion of time of the professional assigned to the instructional development agency was expressed in Table IV in terms of a full-time-equivalent faculty member (FTE).

The proportion of professional to nonprofessional personnel is determined primarily by the activities and responsibilities of the individual instructional development agency. For example, an agency concerned primarily with providing consultative assistance to faculty or conducting faculty seminars had a high proportion of professional personnel. An agency that included among its responsibilities the operation of an audiovisual media center or the operation of an instructional TV station had a higher proportion of technical and clerical personnel.

Since instructional development is essentially an applied behavioral science, its practitioners, who comprise the professional staffs of instructional development agencies, consist primarily of psychologists. However, a wide variety of other academic disciplines are represented as well. Among these are education, communication arts and sciences, instructional media and technology, and philosophy.

The next section of this report will describe the methodology of instructional development in more detail.

CONFERENCE PROCEEDINGS

One of the primary purposes of the conference was to enable the participants to share experiences and explore ways of increasing the effectiveness of their respective agencies through improved communication and mutual cooperation. Conference discussions focused on three major topics: first, problems that confront faculty members who wish to improve their teaching; second, the variety of programs and procedures that instructional development agencies have developed to assist them; and third, methods of improving instructional development activities. This section of the report summarizes these discussions.

Factors Contributing to Instructional Problems

What factors contribute to ineffective college teaching? What problems confront the college teacher who wishes to improve his instructional capabilities?

For the past two years a Project to Improve College Teaching has been conducted by college faculty from colleges and universities throughout the country. This project has been jointly sponsored by the American Association of University Professors and the Association of American Colleges and supported by a grant from the Carnegie Corporation.

Several preliminary reports issued by the project provide answers to the above questions. They state clearly the problems as perceived by the faculty themselves and summarize the problems faced by instructional development agencies in assisting faculty to improve instruction.

The background paper for the conference states:

> Although teaching is nominally the primarly mission of nearly every college and university, it is in fact much neglected. Most faculty are unaware of anything their school does to effectively encourage good teaching. Good teaching is not adequately rewarded, tenure has an adverse effect on the quality of teaching, and demands for serving on committees and conducting research cut into time available for teaching. Prospective teachers seldom receive graduate preparation for college teaching, and in-service training programs are virtually non-existent.

Three factors contribute to ineffective college teaching: (1) faculty members usually have insufficient knowledge of the principles of learning or are not trained to apply these principles to the practice of instruction; (2) the university environment provides few incentives for faculty to improve their instruction; and (3) economic and social pressures emphasize increased productivity rather than teaching effectiveness.

Insufficient knowledge and training. The average faculty member is well-trained in his specialty, but is ill-prepared for teaching. He usually does not have the requisite instructional knowledge or skills and has little time to acquire them. In graduate school, his training is concentrated primarily upon developing competency in his discipline and is directed toward learning how

to conduct independent scholarly investigations. He receives little or no formal training in the psychology of learning or in the application of learning principles to the practice of instruction.

In his everyday academic life, he is under continuous pressure to publish scholarly works so that he must spend much of his time reading in his field of interest and doing research. These requirements, together with his other academic responsiblities, leave little or no time to improve his instruction.

To alleviate this problem, college instructors need help in acquiring the knowledge and skill which they need to improve their teaching.

Few incentives to improve instruction. Most colleges and universities assert that faculty members have a dual role: to produce new knowledge and to communicate knowledge effectively to their students. However, the facts indicate that research productivity is more highly valued than good teaching. Advancement, recognition, and monetary rewards are gained through publications, not through effective instruction. Consequently, there is little incentive for the faculty member to devote the limited time that he has toward improving his instructional skills. To alleviate this problem, incentive schemes are needed to even the balance between research and teaching.

Economic and social pressures. There are numerous pressures, both economic and social, exerted on the university to increase productivity. Because of increasing costs, legislators, taxpayers, and parents insist on increasing course loads. In addition, the advent of open enrollment in many colleges and universities has increased the number and diversity of the student population, thus placing more strain on teacher capabilities. However, productivity need not be defined in terms of the number of contact hours or teacher-student ratios but instead in terms of instructional effectiveness and efficiency. Thus, higher productivity per tax dollar could mean producing, in a shorter period of time, more students who are better educated and better trained. To achieve this goal requires both that teachers learn more effective and efficient instructional procedures and that the public accept a more appropriate criterion of educational productivity.

Incentive Programs for Improving Instruction

The typical university setting does not encourage faculty members to improve their teaching. Therefore, the motivational dynamics of the university setting must be changed in order to promote instructional improvement. It is likely that the degree of alteration will determine the degree of resulting motivation. This section details four methods that have been used to foster instructional improvement, each with a greater degree of modification of the university environment.

Distributing papers on teaching and learning. The first method is directed at increasing an instructor's awareness of possible deficiencies in his teaching practices and suggesting new ways of removing these deficiencies. A simple, relatively inexpensive way to accomplish this is to distribute papers discussing topics in the realm of learning and teaching. Sometimes a self-scored questionnaire about a topic such as evaluation or motivation may be included. Of course, it is generally necessary to provide a seminar, workshop, or private consultation to accommodate those who show an interest in

carrying out ideas suggested in the papers.

The approach is likely to generate interest, and if a seminar can be formed in which professors learn teaching skills, it is certainly worth its cost. A paper is most useful when an agency cannot pinpoint the professors most interested in instructional improvement.

Encouraging effective teachers. Another way to make faculty members aware of effective methods of teaching is to disseminate information about effective teachers so that they may serve as models for others. A single innovative faculty member may be the spark needed to kindle the fires of innovation within a department. However, if the administration is not tolerant of instructional change or if the innovative faculty member is considered a maverick, the method will have limited effects.

Supporting instructional projects. Some instructors may wish to improve their instruction but may not be able to obtain sufficient resources to do so. Departmental budgets do not usually provide for released time, graduate assistants, or equipment for instructional improvement. Several universities represented at the conference provide grant funds for instructional development projects. Faculty members, departments, or colleges may submit proposals for funds. Four of the general criteria that have been used to assess projects are: (1) the number of students affected, (2) evidence of an experimental approach, (3) potential application in other areas, and (4) the possibility of evaluation. IDA staff members stand ready to help teachers write grants, proposals, design their courses, and carry out their proposal.

Besides removing roadblocks to improvement, grants also provide a reward for improvement: to receive a grant is to be accorded some prestige within the university. In addition to providing the necessary resources to get the job done, grants provide recognition for effective teachers, demonstrate that the institution supports instructional development, and is the first step toward long-term development.

Aiding teacher evaluation. At present, in most institutions of higher education the primary criterion for promotion is the length and quality of the list of a faculty member's publications. Teaching and instructional improvement are considered, but are not given the priority of research publications. IDAs provide help to derive criteria for evaluating instruction and, thereby, provide a basis for rewarding good teaching. Thus, an instructional development project may be considered the equivalent of one piece of research or one major publication. It often takes a great deal of time to convince a department to make a policy change regarding good teaching, but it might be an important goal.

Teaching Instructional Development

Teaching is a complex skill, and effective teaching is the result of planning that takes many factors into account. The subject matter, student characteristics, and the instructional environment must be considered. IDA staff members try to make faculty members aware of these factors and help them develop skills in dealing with these according to principles of learning and teaching.

College faculty members need information about learning principles and the skills to put them into practice. To meet their needs, IDA staff members provide individual consultations, courses, seminars, workshops, and training programs. As a result, course procedures are modified, curricula are redesigned, and above all, student learning is improved.

Contributing to faculty orientation seminars. The purpose of faculty orientation seminars is to inform faculty members of the services available to them and how to make use of them. In this way a faculty member may learn that the university approves of instructional development.

An orientation seminar is likely to be most effective when faculty members first arrive at a university. In addition, an orientation is likely to be valuable to long-time faculty members if it clarifies typical instructional problems and how to solve them.

Conducting limited faculty workshops. A second procedure for helping the faculty develop instructional skills is the workshop that concentrates on one specific principle, such as operant conditioning, or one specific technique, such as questioning. If these specific topics are chosen by a survey of faculty interests, the workshop is likely to meet the needs of the group.

A single idea workshop is most useful when faculty members have a limited amount of time and an immediate need, for example, when finals are approaching and some teachers question the validity of their own evaluation procedures. By the end of a series of these workshops, a faculty member might have a number of new instructional principles and techniques in his repertoire.

Of course, in a single idea workshop there is a limit to what a teacher can learn: he may be able to identify a method and some of its properties, but be unable to put the method to use. However, the workshops might create enough interest to encourage the teacher to seek further advice and instruction.

Conducting long-term workshops. Single idea workshops are too short to develop more complex instructional principles and skills: any complex skill requires time for practice and feedback.

Longer workshops are useful to teach complex instructional skills and to demonstrate the knowledge or skill to be taught. For example, techniques of programmed instruction may be taught by means of programmed text; objectives precede a lesson on how to write objectives.

Some longer workshops have employed simulation techniques focused on changing attitudes toward aspects of instruction. For example, one three-day workshop focused on school admission practices. A series of panels representing independent admission boards of that college were given the vitae of several students. They were asked to choose those students who should be admitted. After deliberation, the panels submitted their lists of accepted students. When the participants found that there was little overlap between the panels' choices, they realized that criteria for the selection of students needed to be clarified. In addition, they felt that simulation had been a good technique for both instruction and attitude change.

Longer workshops are usually staffed by IDA professionals and resource

people drawn directly from the teaching faculty of the participating department or college. Both planning and running the workshop are joint efforts. Joint participation increases the possibility of faculty participants accepting the new ideas.

Some faculty members become interested in personal long-term instructional development projects. Their objectives may include the systematic exploration of some instructional development principle or an instructional technique or an extensive curriculum modification. IDA staff members support these projects in several ways. One way is to run long-term seminars. These seminars may run for months and culminate in the production of some instructional project. For example, one agency ran a seminar in which, after an eight-month familiarization period, the members of the seminar worked on an instructional problem in the community.

Long-term seminars can be structured so that faculty members can build on what they have already learned. For example, one agency conducted a series of seminars such that the initial seminar began by dealing with faculty members' concerns, such as the content and structure of their courses. The faculty members were led bit by bit from discovering the structural relationship of the content of the subject to deriving objectives, producing evaluation items and considering alternative means for presentation and practice. Each faculty member designed a pilot instructional project in the seminar.

Training teaching assistants. Because graduate students teach many courses, several IDAs have developed programs directed at improving the instructional skills of graduate teaching assistants. The effectiveness of these programs depends, to a great extent, upon departmental support and commitment of resources.

Training programs for GTAs provide both theoretical background and practice in applying principles of learning. Programmed materials can teach GTAs instructional theory and give them assignments to try out in their courses of instruction. Several GTA training programs have incorporated videotape recording techniques to provide feedback to GTAs regarding their performance progress.

The advantages of programmed materials are that they are self-instructional, relatively inexpensive, if they have already been developed, and may include a comprehensive set of principles used to solve instructional problems. The advantages of including videotape recorded feedback of real classroom teaching are that GTAs have the opportunity to apply the theory to actual classroom practice, are able to apply new ideas in a non-threatening atmosphere, and receive feedback and guidance.

Consider the three central characteristics of instructional procedures used by IDAs. First, an approach is designed to meet particular needs of faculty members. Second, an attempt is made to demonstrate the application of principles; i.e., the workshop or seminar is a model in practice. Third, a project is designed to combine the available expertise—the subject matter competence of the faculty member and the teaching competence of the instructional developer.

Service Programs

Providing service to the administration. IDAs provide data for administrative decision-making regarding instructional policies and practices such as the feasibility of the use of computer-assisted instruction and the effectiveness of closed circuit TV courses.

Providing service to the community. Although most IDA activities take place within the university, occasionally an opportunity arises to provide service to the surrounding community. The expertise of IDA staff members has been used to aid hospitals, urban training programs, civic groups, and inservice training projects in public schools. In one college community, for example, a civic group expressed interest in learning more about the university and its procedures. After some preliminary discussion a decision was made to hold periodic seminars to acquaint the group with issues of their choice. The seminars lasted for over eight months and finally encompassed several community groups. The fact that the seminars lasted so long demonstrates the motivation and the positive attitude of the groups. In addition, data obtained from questionnaires indicated that members of the group had gained a deeper understanding of the complexity of a university and of teaching and learning.

Providing service to the student body. College students are another population unaware of instructional development or the workings of IDAs. Some agencies provide lectures and workshops for students. One agency, for example, provided brief learning experiences run according to different teaching methodologies for students. In this way, the students were given a basis for selecting among instructional alternatives that might exist within the university. After such an experience students who criticize a university's instructional policy might be able to give some positive suggestions.

Improving Instructional Development Activities

Thus far, this discussion has covered the methods and procedures used by IDAs to alleviate instructional problems. This section will discuss the problems that IDAs have encountered in performing their functions.

The instructional development agency is a relatively new concept. Several ways of operating have been tried; some work and others don't. Unfortunately, there are no hard and fast rules regarding good and poor procedures. The general problem is to find ways an IDA can best contribute to improving undergraduate education. Specific problems are discussed below.

Clarifying an agency's role. The first problem is whether an IDA should actively promote instructional development or should it provide assistance only when requested?

If an organization is relatively small, it may not be able to handle the volume of work that it might generate through active promotion. However, even larger organizations ought to approach active promotion gradually: an aggressive approach could alienate some faculty members, particularly those who need the help most.

Active promotion of instructional development certainly does not mean forcing faculty members to make use of IDA facilities. It does mean disseminating information about new practices and making the IDA and its function widely known. Therefore, an active stance is justifiable as long as the agency can follow up its suggestions with help.

Providing greater incentives. What can instructional developers do that will best help the universities provide incentives for college teachers to improve their instruction? An IDA can provide the criteria used to evaluate faculty so as to provide a basis for rewarding good teaching.

a. Providing a Challenge for Faculty Members. In attempting to motivate faculty members to improve their instruction, IDA staff members vary the intensity of their demands for excellence. At times, criteria are too demanding for a faculty member; the project is no longer a reasonable challenge, and he is driven away. At other times, criteria are not demanding enough so that there is no challenge, and the tasks are considered intellectually demeaning. Therefore, the criteria for judging instructional improvement must be challenging enough to demand some thought and work, though not so hard as to be impossible and not so easy as to be trivial.

b. Providing Grants. Some IDAs are associated with educational development programs which provide grants for instructional development.

To what degree is the use of money to motivate faculty successful? It might be safe to say that the use of dollars is an effective incentive in many cases. Often faculty members continue to improve their instruction after the grant is spent.

Instructional development grants may be viewed as "seed money," investments in instructional innovations. Once new procedures have been developed, their operational support is assumed by the academic department.

Often such projects, which result from instructional development, produce instructional products such as films and programmed texts which may be salable, thus amortizing some, if not all, of the developmental costs. In addition, the royalities obtained from such products provide an incentive for faculty members to initiate instructional development projects.

Choosing the best target populations. Faced with limited resources, an IDA must consider the target population in which it invests its resources. Which investment will result in the greatest, quickest, and highest quality improvements?

An instructional development agency can invest its resources—time, energy, and money—in a large number of small projects or in fewer, more comprehensive projects. The choice of project size should depend on its impact. A large number of relatively small instructional projects produces an impact on many departments. Fewer, larger projects produce large changes within the target departments. The main criterion is the estimated probability of success. Projects that produce no definite results, or that are not implemented, produce frustration and disillusionment.

a. Helping individuals and groups. One point of view suggests that IDA staff members should deal primarily with individual faculty. Other views limit the target population further. They believe IDA staff should deal with individuals who demonstrate a willingness to commit time to developing a better course of instruction. But, when a faculty member's problem requires changing a system, IDA staff should consult with the department. For example, if a faculty member presented a problem dealing with course prerequisites, department members teaching the preceding courses in the course sequence must be consulted.

b. Teaching unskilled teachers. Should an effort be made to help teachers who have so little instructional skill that little learning takes place in their courses? Because of the limits to IDA staff time, some participants in the conference felt that it simply was not worth while to train extremely poor teachers. Often poor teaching is due to emotional problems. The consensus was that IDA staffs should not attempt to deal with these kinds of problems.

Improving the training of teaching assistants. In most universities, graduate teaching assistants teach more students than the faculty does. Thus, to teach graduate assistants to improve their instruction would have a great impact on university instruction. If the idea of training teaching assistants to teach well is accepted on a wide scale, an institution-wide training program would be required. Such a program would require a major commitment of resources.

Assuming that a GTA training program should be conducted, should it be run by the instructional development agency or the academic department or by a team composed of representatives of both? If the program were run by a team, teaching assistants usually benefit because those with subject matter competence and those with knowledge of the technology of teaching are present.

Organizing for greater impact. How should an IDA staff be organized? Many alternatives were suggested: (1) full-time professional staff members, (2) part-time professionals with joint appointments in academic departments, and (3) staff members appointed within departments working with faculty members on many small projects. The staff member serves as a communication link within each department to help other faculty members develop successful instructional projects.

Improving Teaching Procedures

a. Meeting individual needs. How can an IDA train individual faculty members most efficiently? There seem to be two alternatives: (1) develop a variety of available courses of instruction from which the university faculty might choose, and (2) tailor-make each instructional experience. There are a sufficient number of common instructional problems for which packaged courses of instruction could be developed. A faculty member could be given packaged courses covering basic principles or skills. Once these had been mastered, the tailor-made instruction could be designed to help an instructor solve his particular problem.

b. Reaching for a criterion of excellence. Is it possible to train faculty members to a high enough degree of skill so that they do not need con-

sultative help? Individual differences in motivation and willingness to devote the necessary time are important determining factors. Experience has shown that most faculty members continue to consult IDA staffs no matter how skillful in teaching they become.

Establishing confidence in instructional development agency staff members. Confidence and trust in the expertise available through IDAs is essential if faculty are to make use of their services. A highly competent staff, with established academic credentials and well developed interpersonal skills, is an essential prerequisite for establishing and maintaining strict confidence.

Creating better communications between agencies. Instructional development is a new, growing discipline. Staffs need to communicate in order to share experiences and successful procedures. Several ways to continue communication started at the conference were suggested.

a. Communication through meetings. A series of meetings similar to the conference is one alternative. Joining or organizing an interest group within a professional organization such as the American Education Research Association is another. The advantage of the latter method is that most participants attend these meetings. But, participants realize that their time is taken up with other business at conventions. Therefore, most expressed a preference for a meeting like the one held at MSU; i.e., a retreat in which the sole purpose was communication among themselves.

b. Communication through computerized systems. A computerized communication system might be programmed to yield information about the current efforts of each agency. Its users might obtain information about a particular sort of instructional problem; this development, in fact, is likely to be available in the near future. Of course, computerized systems are only as good as the material submitted to them; it would be the responsibility of each instruction development agency to put in accurate information to make the system useful. It was recognized that the cost of developing and maintaining such a system might be prohibitive.

c. Communication by means of a journal. A journal, either formal or informal, could provide a relatively inexpensive method by which to exchange information. Most participants at the conference favor creating a professionally refereed journal devoted to instructional development activities to which a professor could contribute. Thus, an instructor could receive publication credits while improving his teaching. An existing journal, called **Development and Experiment in College Teaching**, currently published at the University of Michigan could very easily evolve into such a journal.

The major emphasis of the articles in such a journal would be scientifically valid demonstrations of instructional improvements.

Informal publications, such as newsletters or annual reports, could be exchanged. Although this procedure is limited to one-way communication, at least it lets each agency know what others are doing.

Continuing to evaluate progress. Each IDA has the responsibility of assessing its own impact. The nature of the assessment is based on the goals of

the agency and, in turn, the nature of improvement of the agency is based on the nature of the assessment. The following criteria were discussed:

a. Evaluating effectiveness. The goal of many projects is the increase of instructional effectiveness. If an instructional development agency asks questions about effectiveness; that is, how well the students have achieved, the resulting improvements are likely to lead to improved faculty training and improved models of instruction.

b. Evaluating efficiency. If questions are asked about efficiency; that is, if the time and money invested in an innovation are worth the cost, the resulting improvements are likely to lead to research on instructional models that give the greatest amount of student learning for the least amount of time and effort.

c. Evaluating acceptance. Even when instruction is effective and efficient another criterion might be used—acceptance of the resulting innovation. An IDA may ask questions that deal with acceptance; that is, whether a faculty member, a student or an administrator would be likely to use this improvement and maintain it. If an agency asked acceptance questions, the resulting improvements are likely to be programs to motivate faculty, programs to teach students how to use different models of instruction, and programs to educate pressure groups, especially such groups as the board of trustees.

In summary, evaluation results may determine the allocation of IDA resources in the future. An agency must be aware that its evaluations may lead it toward a specific sort of improvement. It is evident that each agency must determine what combination of goals it wishes to pursue.

Concluding Statement

Instructional development agencies can be effective in contributing to the improvement of undergraduate education. It should be noted that such conditions increase when the university climate is supportive. A supportive climate includes a dynamic nucleus of innovative faculty members, a financial commitment to instructional development, and channels for dealing with constructive ideas coming from students and faculty.

The purpose of this conference was to provide an opportunity for the participants to share experiences and thus stimulate further productive efforts in the future. The results of an informal questionnaire distributed to the participants at the end of the conference indicated that this purpose was achieved.

APPENDIX

The Conference on Instructional Development Agencies in Higher Education, reported in this book, was held to accomplish two purposes. First, to provide a comprehensive picture of how these agencies are structured and how their activities contribute to improving instruction in the colleges and universities at which they are located. Instructional development agencies are a relatively new phenomena in higher education and accurate information about them is not generally available. The second purpose of the conference was to provide an opportunity for staff members of participating agencies to share experiences, discuss mutual problems, and explore methods for increasing the effectiveness of their operations.

In the opinion of the editors, the papers in this appendix are an important contribution to achieving both purposes of the conference. Before the conference, a questionnaire was sent to the participants and, in response, each wrote a paper describing his agency. These papers were distributed to all the participants and provided a framework for subsequent conference discussions. Collectively, the papers in the appendix provide a comprehensive and detailed description of a representative group of instructional development agencies currently functioning in institutions of higher education. This is the first time such information has been made available.

As may be expected, the papers differed in format. Some writers preferred to answer each questionnaire item sequentially while other employed a more discursive style. The papers were not modified by the editors except for a few instances in which a lengthy table or chart was replaced by descriptive text.

To guide the reader, the questionnaire to which the participants responded has been included in the first part of the appendix.

QUESTIONNAIRE

I. Background and Institutional Climate

A. Under what circumstances was your organization started? Date? Number of staff members? Original budget?

B. What instructional improvement agencies existed at your university before yours was started? What functions or agencies were transferred to, or incorporated in, your agency?

C. In your university, what institutionalized procedures exist for recognizing or providing visibility to good instruction?

II. Structure and Function

A. What are the purposes, mission, goals, or objectives of your agency? Are these part of a long-range plan? Under what circumstances have your objectives changed since your agency was started? Which additional functions or objectives do you believe your agency should have?

B. Where in the administrative structure of the university is your agency located? What are the implications, advantages and disadvantages of this location?

C. Describe your physical plant, e.g., number of offices, laboratories, other facilities, and classrooms. Are these facilities under your direct control or for your exclusive use? Where are your facilities located on the campus? What equipment do you use? What equipment is under your control?

D. How is your agency funded? Are you required to seek outside funds? Do you have discretionary funds? How are these disbursed? What is your present budget? What are your budget categories? What percent of the total does each major category get? How has your budget changed over the years?

E. What is the internal organization of your agency, e.g., hierarchy of decision making and chains of communication? How many professional and non-professional staff members are there? What is the function of each category? What is their training? What degrees have they attained? What is the rate of staff turnover? Is there in-service training? Do you employ students? Why is this internal structure used?

F. What are your relationships with academic departments, service departments, administration, and organizations like yours within colleges or departments? Do you consult with them? Are you consulted by them? Do you team up? Do you have staff members with joint appointments?

III. Activities

A. Estimate the proportion of total staff time engaged in (1) administration, (2) teaching, (3) R & D, and (4) service (speeches, workshops, consultation). How do you determine priorities among these four areas? What courses or seminars are taught by your staff? Who are the students? List R & D project areas. List service activities and target population (include service to community agencies outside the university).

B. In what do your various activities originate; describe procedure and stimulus. What are the typical results of each type of activity? Please present data if it is appropriate and available. How and to what population do you disseminate your results or products? How and to whom do you disseminate information about your organization? In what way has the dissemination of information aided your programs? What sources do you rely upon for new information? How do you act upon new ideas?

C. Who uses your services? How do they go about it? What incentives are there for using your services?

D. What have been your most important or long lasting results? What have been your most effective activities? What have been the shortest lasting results? What have been the least effective activities? Have you an explanation for these answers?

E. Who evaluates your activities, products, or results? What criteria are employed? Why are these critieria used? What are the advantages and disadvantages of this approach?

IV. Problems

A. List your current problems in order of importance. For each one indicate how you tried to solve it, the results, and any explanation of the results.

B. What are your most important needs at this time and in the near future?

ATLANTIC INSTITUTE OF EDUCATION

Halifax, Nova Scotia

Gary J. Andersen

I. Background and Institutional Climate

A. The Atlantic Institute of Education was established by an act of the provincial government in January 1970, and the staff of the institute were appointed and commenced work in August 1970. The Atlantic Institute was the culmination of twelve years of discussions on the part of premiers, ministers of education, and teacher educators in the four Atlantic Provinces of Canada. The idea of an institute grew out of a need for improved graduate training for teachers in the Atlantic Region. A number of options were considered—the first being a large single structure which would include all the graduate study and research in this field on a single location. That plan was rejected by those who had interests in their own institutions and was later replaced by the recent proposal which includes a decentralized form of institution. During this year, the institute employed a director, an assistant director, two half-time consultants, three secretaries, two research assistants, and a number of occasional workers. The budget for the eight-month period was $150,000 which included $100,000 in capital expenditures.

B. As described later on, the Atlantic Institute serves many universities. Some had commenced operations in terms of instructional improvement and had had one or two staff members involved in that work. The precise mechanisms have not yet been finalized, and we are continuing to establish links with existing field resources. One of the local institutions has received a foundation grant of some $35,000 to provide the salary of a professor who would work in instructional development. It has experienced considerable difficulty recruiting the right type of staff member to, what amounts to, a school of engineering. The Atlantic Institute is cooperating with this institution and hopes to offer a joint appointment to the selected candidate. This we feel would be much more attractive than the isolation of an engineering school. We have also attempted to broaden the role by having such a person involved in all the universities of the region.

C. Again since we serve many institutions, the patterns vary. Typically, however, the largest university would emphasize research activities to a much greater extent than teaching ability. Many of the institutions are smaller and are more in a position to reward teaching competence. It should be noted, however, that none of the institutions has any type of formalized structure for recognizing or rewarding teaching competence. Promotions and salary increases are awarded with some acknowledgement of teaching but this tends to be of the hearsay, nonsystematic variety.

II. Structure and Function

A. The overriding objectives of the institute are the improvement of teacher education and education generally in the region. This is indeed part of a long range plan, and we are attempting to deprive new mechanisms to accomplish our objective. Our primary concern under this general goal is work with teacher training institutions and teachers for the public schools. However, because of previous involvement and interest in university instruction and because of the need and interest on the part of universities, we have shifted our objectives to include this as a priority. We don't have much of a problem with functions or objectives as we have considerably more than we can adequately handle.

B. The Atlantic Institute of Education is a body which serves eight universities and colleges in the province of Nova Scotia. With eight institutions serving a population of 800,000 persons, there is a considerable need for superordinate bodies to coordinate the work of various institutions. The advantages of this type of situation are that we can hold workshops and conferences, etc. on an interinstitutional basis. Naturally, we are not totally in tune with the day to day operation of any one university, but are in the process of establishing resource persons in each separate location. Furthermore, part of our plans include expansion to the other three provinces of Atlantic Canada. Should that develop, we will then have over twenty institutions under our umbrella, though it should be pointed out that our area of jurisdiction is delimited to teacher education and the departments of education in these institutions.

C. The physical plant consists of a converted four-story house, including sixteen rooms some of which are large enough to hold up to forty persons for workshops, films, and whatnot. These facilities are under the direct control of the institute and are in the centre of the largest city in the province which includes four of the eight institutions we attempt to serve. We have been building up library facilities, and workshop materials, and have a number of films and equipment, including carousel, overhead and 16 mm projectors and tape recorders. We expect to purchase a videotape portable unit shortly.

D. The institute is funded directly from the provincial government. We are permitted to seek outside funds, but are not required to do so. The present budget is approximately $200,000 per year, but this includes a good deal of work for teacher education generally, for reform in the public schools, and for the development of graduate programs in several fields of education as described later on. We budget by program and attempt to account for our funds according to the function which they are expected to serve. Our budget is divided into overhead, including administrative costs, etc., and is broken down by program. Our policy has been to engage in three or four major programs only and develop them to the point where other agencies will take them over and continue to support and finance them, while we get involved in new developments. The Atlantic Institute is an initiating body, and it is not possible for us to get locked into the perpetual administration of one specific program. We keep some funds unmarked so that we can award small grants to particularly innovative projects. Our intention is that we will fund only those projects which have some type of built-in multiplying effect. Thus in the past

year we expended a couple of hundred dollars to set up a federation of student teachers which had not existed prior to this time. They have been working on their concerns and have provided another voice in the continuing reform of teacher education. We have had a number of applications for research funding, but much of this tends to be narrow in focus with rather limited multiplying value, and therefore we do not fund it.

E. We have a ten-member board of governors, including wide representation from throughout the province. This is the supreme decision-making body of the institute and has the power to award degrees and diplomas in education should the need arise. In practice, the director and assistant director make all major decisions and recommend approval to the board of governors. By next September we should have approximately nine professional staff members, six research assistants and three secretaries. It is difficult to specify functions as it would depend on the particular project and individuals involved. We tend to have a coordinator in a program area with research associates, research assistants, and senior research associates working in conjunction with the coordinator. Most of these would have Ph.-D.'s or equivalent. We are too new to have established a staff turnover and too small yet to have any in-service training for ourselves. Students are employed as research assistants. We do have programs for students which are of the informal self-directed apprenticeship variety. Students are included in meetings, discussions, and other professional activities under the direct supervision of the academic staff. We hope to develop from the local human resources persons who have intensive supervised experience in the type of activities which we assume. For example, we will begin by including students in some of our workshops as participants and later develop them to the point where they can assist the regular staff in these workshops and hopefully run them themselves. Perhaps a word concerning the type of training we require would be helpful at this point. We essentially want people who have served in the apprenticeship model. In the case of university instruction, we want people who have served a supervised apprenticeship in consulting with staff members, who have initiated a number of course reforms and other projects on their own and who have carried them to a successful conclusion. Thus we are less interested in a very theoretical dissertation type project than in a number of smaller, but more relevant pieces of work which a student can produce. It is quite clear that this type of training is found only in institutions catering to a very small number of students. The program at McGill is typical of the type of thing we are developing here. The apprenticeship, clinical type experience is emphasized almost to the exclusion of formal course work. In our own programs we are attempting to replace the research thesis by three or four demonstration projects of sufficient caliber to be published.

F. We have most cordial relationships with the various universities and colleges which belong to the institute and consult with them in an informal way. Since most of our activities have been in the field of teacher education, we have had a number of more formal meetings with the deans and heads of departments who are concerned with that field. We are attempting to initiate joint appointments for staff members between our institute and the various universities. We have also succeeded in obtaining the services of some staff members on secondment.

III. Activities

A. We would spend presently, probably 50-60 percent of our time on administration, and 10-15 percent on teaching, 10-15 percent on research and development, and 20 percent on service. We haven't attempted to define priorities in terms of the four areas at this point in time. This year has been a development year, and we have not taught formal courses or seminars on a regular basis. Next year we will have a couple of graduate programs in education and will be teaching courses in connection with them. This incidentally, should change the amount of time spent considerably, teaching being emphasized as much as 80 percent of the time of some individuals. We have spent most of our energies in attempting to develop two graduate programs which arise from two different sets of needs in the region. One in counselling was initiated because of the great deal of duplication provided when four or five universities are each training five or six counsellors at the masters level. We feel that, through a pooling of resources, we can provide much more quality in the product while at the same time making the system somewhat more efficient.

The procedures we have adopted in the two graduate programs are as follows:

a. A group of 25-50 persons, experts in the field under consideration, from throughout the region have assembled to share problems in the general area of training. The members of the group are instructed to serve in their personal, professional capacities and do not speak for their institutions.

b. We then evolved small steering committees, including people who are directly concerned with the training function and who work with us to provide an ideal program in the given field of study. We appoint a full or part-time coordinating secretary to serve this group and work with the group in evolving this ideal program. Once the ideal is achieved on paper, we attempt to implement it. In the case of our counselling program, we have derived a full time, two-year master's degree the second year of which is taken under the auspices of the Atlantic Institute. Staff members are drawn from many of the universities and school systems in the region and beyond. We are developing outcome—oriented models of training. Thus, there will be few formal courses in the traditional university sense. We will deal with actual field problems and will work as much as possible in the field. By working with professors in school systems for example, a prospective counsellor can gain the needed experience in group processes, in behavior analysis and management, in research and evaluation, and so on. Each student would be responsible for three or four small demonstration projects which would testify to his competence in the various skills.

c. We hope that once these programs are functioning successfully, that we can gradually shift responsibility for their continued operation to one of the participating universities, who will draw upon the staff resources of all universities, but who will centralize the activities in one location. Students

and staff can then be mobile and can achieve a program which makes best use of the total resources of the area.

The second graduate program on which we have been working is the special education, and it arises due to the total lack of offerings in this field in the Atlantic Region of Canada. We have identified a number of courses in participating universities which together would be relevant for a program in this field. Next year we will have some fifteen students who will take three courses in three different universities and a number of other experiences centered in the premises of the Atlantic Institute. The institute itself will have several staff members in the field who will work with these students and develop their skills in special education. After twelve months of full time study, students will be awarded a bachelor's degree in special education and those who continue for a second twelve-month period will terminate with a master's degree. Our students enter with a bachelor's degree or equivalent. As well as these two graduate program areas, we are attempting some other types of innovations in teacher education. In an attempt to increase the self concept of people in the region, we are attempting to identify outstanding efforts of teachers at all levels of education. We will be starting a newsletter which describes these innovations and which will have a substantial circulation. We also hope to identify at least one school at the elementary or secondary level in each of the four Atlantic Provinces and set it up as an in-service training laboratory for teachers in other parts of the region. We are working on training packages which will enable visitors to spend a week or two in these schools and learn from their experiences in them. Other activities have included meetings with all the deans and department heads of the teacher training institutions, and we have a staff member who is working with them to evolve a master plan for teacher education for the region. In terms of research, we have attempted to avoid the theoretical line of research in favor of applied studies which are of direct use to people in the local area. Thus, we have completed a study of teacher supply and demand and are attempting to disseminate its results to those who are responsible for admitting teachers into teacher education programs.

B. Our activities are originated in a number of ways. Some are suggested by people in the field, and some are in the form of requests from people for assistance or financial aid, which is rarely given. We initiate a number ourselves and work cooperatively with people in the field in developing others. We have not yet evolved formal dissemination plans but hope to initiate a newsletter concerned with instructional innovations to have a fairly extensive circulation next year. We have received approximately sixty requests for information on the organization from a number of provinces, cities, states, and countries. We have received roughly seventy-five requests for advice on educational and research problems.

C. Our services have not been overly plentiful yet because of our developmental life span. We are attempting to condition the population so that they will respond only when there is a high probability of being served.

D. We have had one formal workshop involving fifteen educators. This lasted four days and was a workshop action oriented endeavor. It was most effective, and people were able to return to their home institutions with an

increase in morale and increases in their level of skills, instruction and instructional innovation, and we have established valuable links with persons in the field on the basis of this activity. We are really too new to specify least effective activities. I am certain we will have plenty of opportunity to be ineffective.

E. There is a self evaluation component built into all our activities, and we are in the process of establishing external experts in each of our program areas who can come in a couple of times during the year, who can examine our activities from a distance, and who can provide valuable external advice and comment.

IV. Problems

A. Staff is a considerable problem in terms of instructional innovation in universities and colleges. There are very few people in the world trained to provide the kind of service which is required. Our solution to the problem of staff has been to attempt to seek out individuals and train them ourselves in an apprenticeship kind of way. There doesn't seem to be fresh Ph.D.'s who have the applied orientation which is essential to this type of work.

B. Our most important needs are money and chance to develop. We must continue to establish links with the universities in our constituency and must get these solidified and working before we can expect too many large scale changes.

CENTER FOR RESEARCH AND DEVELOPMENT IN HIGHER EDUCATION

University of California

Warren Bryan Martin

The Center for Research and Development in Higher Education, University of California, Berkeley, was established with the assistance of the Carnegie Corporation of New York, in 1956, as the Center for the Study of Higher Education. Dr. T.R. McConnell was the founder and first director. Although the center was organized within the general structure of the University of California and was accountable to the chancellor's office, it was understood from the beginning that services provided would not be those normally associated with an institutional research unit, but, rather, would have a more general scope. All aspects of higher education, in colleges and universities across the nation, could fall within the center's purview. Space was provided in Tolman Hall for the original group of four or five researchers, plus their supporting personnel. The budget was approximately $32,000 annually.

The prevailing organizational idea, in the beginning years, was to draw together a coterie of competent researchers and allow them to pursue their own interests. Programmatic research, with the abilities of researchers focused on shared concerns, would be a later development. As a corollary to the initial philosophy of organization, little attention was given to research on the improvement of instruction, and most attention was focused on organization and administration in higher education.

In 1965, the change was made to a largely federally-funded Center for Research and Development in Higher Education. The center became one of nine units established under federal auspices to encourage programmatic research and development, but was the only one entirely focused on post-secondary education. However, to facilitate program development, the center clustered its research probes around two major concerns, the impact of college on student development and organization and planning in higher education. More recently, the purposes of the center have been further refined. They are now concentrated on the "new" students—those heretofore underrepresented in colleges and universities—and on changing governance configurations on American campuses. Additionally, the interaction between those two foci of concern is being researched, that is, the affect of new students on established governance patterns and the ways in which old or new governance arrangements can facilitate the teaching and learning process with "new" students.

In research, center staff members use tools and techniques of the behavioral sciences to gain information appropriate for these programs of research. The center's dissemination program makes available useable research findings, usually in some variation of the printed page, although there is increasing utilization of alternative media. The center's development program uses research to improve existing instructional programs or

governance patterns. Even more, the center proposes to synthesize research sufficiently to help produce improved curriculum and governance patterns, encourage their installation in institutional settings, and follow through with practitioners in the evaluation of these alternative provisions, drawing from them new research problems.

Whereas until recently, the center maintained a separate development and dissemination section, expecting that the personnel in this section would pick up and carry out the D&D function while research provided data resources, now research projects have been redesigned to include development components, and projects carry budgetary provision for, and give to the researcher responsibility for, the development of research findings. There is still a D&D section where personnel are available to work with researchers in these tasks. Also, of course, there are certain technical services that the special competencies represented in the D&D section bring to the programmatic research efforts.

The center continues to be organized within the University of California, Berkeley, and remains accountable to the chancellor's office (through which all funds are processed and cleared). The obvious advantages in being located on campus and in the academic setting are somewhat offset by the disadvantages of being "captured" by an academic ethos that has traditionally been more concerned for pure than applied research, for dissemination in reports and books more than through alternative media, and for leaving the development of "products" entirely to others.

Currently, the center has space in Tolman Hall on the university campus, where personnel with joint appointments usually have offices while carrying out their academic responsibilities. The center also occupies the fifth floor of the Great Western Building, Center Street and Shattuck Avenue in Berkeley, where the research and development programs are housed. At both locations, the offices and seminar or conference rooms, plus supporting facilities, are reserved for the center's exclusive use. In addition to conventional office equipment, the center has at this location data processing machines and other equipment providing data processing services.

Funding for the center is supplied mainly by USOE, although smaller amounts come from several foundations. The present USOE budget is approximately $700,000 per year. That budget is divided to meet the needs of the principal research and development programs, plus supporting services and administration.

Policy formulation in the center is determined by a research and development committee, a body involving researchers and administrators, whose function it is to monitor existing research and development activities as well as plan for the future; a center council, where broad overarching policies in both professional and non-professional areas of concern are set; a center services committee, with responsibility for all aspects of supporting services; plus ad hoc committees or task force organized to meet special needs. All committees are advisory to the director. He, in turn, is responsible to the chancellor, to the funding bodies, and to the dean of the university's Graduate Division. The director has available to him a campus advisory committee and a national advisory committee.

At the present time there are sixty-five professional staff members and approximately thirty in various non-professional categories. The rate of turnover among senior personnel has been low although, during the summer of 1971, several projects will come to completion, and the consequence will be more change in personnel than the center has heretofore known.

The center feels an obligation to students enrolled in the Division of Higher Education, School of Education, University of California, Berkeley. There are, therefore, seminars and workshops to which these students are invited and participate. Also, students are employed as research assistants and bibliographers, or they may, on occasion, qualify as postgraduate researchers.

It has not been easy to secure joint appointments for senior center personnel in various academic departments. Although doing so has been an objective of the center from its inception, there have been comparatively few. Those achieved have been, or are, in the School of Education, or in the departments of Sociology, Psychology, Anthropology, or Economics. Prospects for joint appointments have not been improved by the fiscal stringencies under which this university, like so many others, is currently operating. Furthermore, with increased pressure for more student contacts and teaching activities for faculty members, the idea of faculty having schedules divided between academic departments and centers or institutes is not now widely approved.

As mentioned earlier in this statement, until recent years the center was content to publish reports of its various research projects. It was assumed, in the spirit of the time, that this information would be picked up and employed by others in the way they deemed best. Not until 1964-65 did the center become more oriented to research *and* development. In the last five years, therefore, research has been much more programmatic, and development has emerged as a major emphasis. While, as mentioned, the center continues to publish reports, monographs, books, and special "broadsides," increasing attention is being given to conferences and workshops, training programs for administrators and faculty, plus information dissemination through videotapes, films, cassettes, and other media. Despite efforts in these connections, perhaps the major D&D resource at the center remains the professional researchers. They, acting individually and collectively, have considerable influence on colleges and universities as well as on institutional consortia and regional or national associations. Their writings are also in demand and have impact for educators, campus policy groups, legislators, and other interested parties. *The Research Reporter*, through which information is disseminated about current research of the center, has a mailing list of approximately 10,000. That list, as with other center contacts, tends to concentrate on senior administrators in colleges and universities and policymakers in state and federal agencies. There are, however, considerable numbers of faculty, students, and laymen on this and other contact lists.

The center has had impact in such areas as the planning and development of the American junior college or community college; the development of statewide planning and coordination for higher education; the conceptualization and implementation of the cluster college concept; new governance configurations, and other innovations or forms of experimentation. The training of administrators and faculty for institutional

responsibilities, including administration and research, are part of the center's influence. In its current programs, the center hopes to increase its services to state colleges and other institutions, including junior colleges, especially those having connections with the "new" student and on their programs for this clientele.

Evaluation of the center is carried out by the campus and national advisory bodies mentioned earlier, but also by site review teams designated by USOE and sent to the center on an annual basis. The center is also required to provide frequent written reports on various aspects of its programs. These usually are requested by Washington agencies, but may also come from other sources.

Problems in the center at present and for the foreseeable future include:

1. Stabilization of priorities in Washington, D.C., so that the center will have assurance that the basis for evaluation which prevails at one given time will likely continue to exist at a later time. Changes in personnel and priorities within the offices of the primary funding agent have sometimes made for confusion, anxiety, and low morale within the center as projects and programs shift to conform to revised expectations.

2. The center has had difficulty achieving truly programmatic research. At the University of California, Berkeley, there are essentially two types of institutes or centers. One is that institute or center established and maintained for a particular researcher who has an idea for a line of research that he wishes to follow. Such researchers are usually entrepreneurial types who can draw funding and, additionally, collect supporting personnel sufficient to carry forward their work. The other form of institute or center is the umbrella organization within which a group of autonomous research scholars find shelter. They are able to spend blocs of time following their research interests without heavy administrative or teaching responsibilities. The idea of a center with a programmatic research orientation, where individual researchers are drawn together, not according to their several interests, but because of their willingness to concentrate on a shared theme, is a concept seldom found and undersubscribed. Therefore, with the center moving in this direction, it has been difficult to find personnel appropriate for this level of cooperation in research and development. There is now a commitment to such cooperative endeavors, based on the conviction that problems in higher education are sufficiently complex and multidimensional that they will yield only to research and development of this magnitude. Nevertheless, there remains the serious problem of staffing such an organization.

3. As the center moves away from an emphasis on research and toward an emphasis on development, personnel are needed with skills in training, systems theory, and the utilization of new media. This requires a retooling or training of existing personnel. It is a slow process and one that is sometimes resisted.

4. Because in higher education change cannot be coerced, it is hard for the center to show product "acceptance" by practitioners in the field, and, thus it is hard to guarantee that work being done at the center is having "impact." At a time when efficiency and accountability are dominant themes, the center is sometimes hard pressed to prove its viability.

5. Because the center's funding has been reduced in recent years, certain projects or programs of research have been forced to modify their intentions and, consequently, many research objectives cannot be achieved. This development has had an adverse affect, and could cause funding agents or other critical observers to conclude that the center has not fulfilled its promises. An attendant psychological difficulty is that there arises an emotional or professional insecurity among researchers, given the uncertainty of project funding, that adversely affects their work and inclines them to think in terms of finding other and more secure situations.

6. Research in higher education, as with so much behavioral science research, tends to confirm the obvious or to deal only with segments of major problems rather than units sufficiently large to have broad utilization in the field. Thus, practitioners often conclude that researchers cannot provide more than is available through experiential or observational skills, or, they conclude that researchers are more concerned with methodology purity than social relevance.

7. One of the most serious problems confronting this center, and researchers everywhere in higher education, is the speed with which conditions are changing, the uncertainty that exists concerning established standards, and the resulting inability of research to keep up with developments in the field. Instrumentation falls behind innovation and is inadequate to measure new developments. Criteria for evaluation become dated. Researchers away from the field for comparatively short periods of time lose touch with the action or ethos there. It is exceedingly difficult to put the pieces together in a way that will show a future-orientation or an ability to effect creative and responsive change in institutions that are being forced to make changes.

INSTITUTE FOR RESEARCH AND TRAINING IN HIGHER EDUCATION

University of Cincinnati

Anthony Grasha

I. Background and Institutional Climate

A. The institute began operation in the fall of 1965 with the objective of providing training and research in higher education at the University of Cincinnati. Heavy emphasis was to be placed on improving the quality of instruction, an area which many felt had been severely underemphasized at the university. The institute was charged with helping to improve instruction by making it more visible and by providing assistance in the development of skills and knowledge necessary to have a good instruction.

The original director was assisted by a staff which included a part-time assistant director, a research assistant, and a secretary. During the first year the institute sponsored several workshops on teaching and learning and consulted with various departments on the improvement of their instructional program. These activities provided needed visibility in support of improved instruction. When the institute began, there were a few formal procedures or programs in existence which fostered the improvement of instruction. An annual Dolly Cohen Award for "Excellence in Teaching" did exist as did a student operated program of teaching evaluation titled "Insight."

In 1966 a major grant was obtained from the Danforth Foundation to support equal educational opportunities for minority students (The Graduate Intern Program). This grant provided initial stability for the institute and represented a sound basis for a building program. The current director and assistant director assumed their positions on a full-time basis in the fall of 1967. The present director was instrumental in establishing the institute, and the assistant director was hired initially to coordinate The Graduate Intern Program.

II. Structure and Function

A. The mission of the institute is to provide focus, support, and resources for educational innovation and change within the university. Implementation of these objectives takes the form of 1) development of prototype innovations such as The Graduate Intern Program and new course offerings such as The Psychology of Interracial Relations, 2) research on new and existing program (i.e., McMicken Honors Program), 3) development for teaching assistants and faculty via teaching-learning workshops, consultation on classroom design and change, evaluation instruments, and research studies, and 4) organizational development for academic departments via research analysis of the departments and consultation to implement changes and improvements which emanate from the research analysis.

Related to all of the above, the institute staff is committed to the development of educational change and organizational development

technology and to the development of action research technology for utilization within the university setting. Moreover, the institute staff is committed to the dissemination of knowledge about innovation strategies and techniques to other educational institutions. We feel that we may be unique among instructional agencies in our emphasis upon organizational development techniques and the technologies of applies behavioral science.

Early emphasis in the institute's development was on items 1, 2, and 3 above. As staff resources have become available and the institute has developed credibility in the university community, increased emphasis has been placed on items 3 and 4. Longterm it is anticipated that emphasis on development of teaching assistants and faculty, and organizational development for academic departments will increase and constitute the major focus of the institute. It is anticipated that work on items 1 and 2 will continue but stem from the work on items 3 and 4 above. Further, we would like to have influence on future organizational and structural changes within the university to the extent these systems relate to the teaching and research process. Moreover, we are interested in helping the university to further utilize the evolving techniques in the area of educational media. It is our feeling that educational media impose new demands on the university and on university personnel That to incorporate such technology in a creative and effective way will require the development of highly integrated change strategies which permit people to absorb and utilize the changes which result.

B. The institute and its director report to the Office of the Provost of the university. The primary advantages of this location are: 1) that the institute and its services are available to all segments of the university rather than being limited by over-identification with a particular academic department or college, and 2) activities of the institute are directly linked to the on-going teaching and research programs of the university. The only potential disadvantage we see in this reporting relationship is that the institute's resources could be overly-committed to short range issues rather than upon longer range activities.

C. The institute is housed in a remodeled bungalow on the north edge of campus. This facility includes three offices for professional staff, two offices for administrative and secretarial staff, and one office for equipment and supplies. Portions of the second bungalow are shared with another institute. This shared space includes office facilities for two or three research assistants and a conference room. The institute, like other campus departments and organizations, can request the use of classroom space as well as meeting rooms in the Student Union and the Faculty Club.

Equipment used directly by the institute staff includes the usual office machines, mimeograph, Dennison Copier, Sony Video Tape unit, record player, and tape recorders. Equipment such as audio-visual aids are requested from the Educational Media Center as needed.

D. The institute is funded approximately 60 per cent by the university general funds and 40 per cent by restricted funds such as grants from outside funding agencies. Restricted funds are acquired directly by the institute from foundations and by departments utilizing our services.

Institute Budget Categories

Professional Staff: Full-time (49 percent)—(1) director-professor of philosophy, (1) assistant director-assistant professor of psychology, (1) senior research associate-assistant professor of community planning, and (1) senior research associate-assistant professor of psychology; Part-time (9 percent)—(1) (⅓ time) senior research associate, (2) (⅛ time) senior research associate, and (1) (½ time equivalent) senior research associate.

Office Staff (15 percent): Full-time—(1) office manager and administrative assistant to director, and (2) senior stenographers; Part-time—(1) (½ time) stenographer.

Research Assistants (11.5 percent) (graduate students): Full-time—(3) research assistants; Part-time—(2) (½ time) research assistants and (1) (½ time) research assistants.

Professional Consultants (4.5 percent): ½ time equivalent.

Supplies, conference expenses, and publications (6 percent), discretionary funds (4 percent).

The institute's budget has increased at about 15 percent per year over the past four years. The relative balance among the categories has remained about the same.

E. The general administrative organization of the institute includes the director, assistant director, and the office manager. The director is responsible for coordinating budget, staffing, and overall direction. The office manager is responsible for the leadership and management of the office staff. The assistant director assists both of the above. In the absence of the director, the assistant director and the office manager assume the director's responsibilities and confer with him as appropriate.

Beyond the above, the work of the institute is organized on a project basis. Each project has a coordinator and one or more staff members. The project coordinator provides overall leadership, draws on other institute staff and resources as needed, and maintains contact with the client organization (i.e., faculty member, academic department, campus organization, etc.). While longer term projects tend to be coordinated by full-time staff, each staff person (full-time professional and office, part-time senior research associates and research assistants) serves as a project coordinator for several projects during a typical academic year. The emphasis on the project form of organization stems from the nature of the tasks we confront and our feelings about what constitutes a healthy, growing organization. The institute is deeply involved in the on-going work of the university. About 50 percent of our activities are workshops, short-term research projects and consultations done in collaboration with others in the university community. Unless most staff members can respond effectively and efficiently on short-term requests for assistance, the tasks do not get done. Related to this, the professional staff are all experienced in the consultation process and have career interests in the applied behavioral sciences. Research assistants are selected for their skill in the consultation process as well as in research.

While the institute is not a degree granting agency, we do assume a substantial responsibility for the growth of development of all staff members including students. We attempt to operate by participative management

because we feel it is an appropriate model and because others on the campus will try to emulate us. Staff members are encouraged to take initiative and assume responsibility for tasks which stretch their current capabilities and go beyond their more narrowly defined functions (i.e., office staff, professional staff, research assistant, and graduate student). Although this stretching is sometimes painful, the resulting growth has been rich and rewarding. Periodically staff members also attend conferences and classes to promote their self-development but the majority of staff training on consultation, research, and administration skills is done as part of on-going projects.

We attempt, albeit not always successfully, to maintain open communication among staff at all levels and across all functions. This is done more informally than formally. We make only minimal use of formal staff meetings as such although we feel we will have to do more of this as our staff increases in size. Staff members are encouraged to ask if they want to know about something or have doubts about their roles.

The four full-time professional staff members have Ph.D.'s in philosophy, applied behavioral science (2) and experimental psychology. Three part-time senior research associates have respectively a Ph.D. in philosophy and masters of social work (2). Other part-time senior research associates are drawn from the university faculty. The research assistants are advanced graduate students in psychyology, sociology, and education. Of the current staff, 70 percent have been with the institute since the fall of 1968. Thirty percent of the staff have joined the institute over the past two years. There have been no resignations or terminations since 1967. Research assistants typically stay at the institute for two years before moving to another assignment on campus.

F. The institute's full-time professional staff all have joint appointments in the institute and their respective academic departments. Their effort is divided about 50-50 between the two appointments. We feel this arrangement permits staff to stay current with their academic career and avoid the possibility that the Institute staff are seen as "guys who talk about better teaching and research but don't do any."

The institute maintains a wide variety of collaborative relationships with campus organizations of all types. We are currently doing major organizational development and research projects with two academic departments, providing training programs for teaching assistants in over a dozen academic departments, sponsoring The Graduate Intern Program which involves collaboration with twelve departments and four colleges, and performing a research study for the Interfraternity Council. We staff a wide variety of workshops for groups like the University Senate, the resident hall staffs, academic departments, etc. We are consulted by groups, we consult with them, and we joint them in team projects.

III. Activities

A. The total staff time of the institute is allocated as follows: 1) administrative, 15 percent; 2) teaching, 33 percent; 3) research and development (including workshops and consultation to the university), 50 percent; and 4) service (speeches) 2 percent. Teaching and research and development areas are top priority. Priorities are based on the contribution to the

university and whether or not the activities constitute the potential for innovation over and above past practices of the university.

The staff teaches the following seminars: 1) Pre-Socratic Philosophy, 2) Semantics, 3) Problems and Issues in Higher Education, 4) Consultative Methods, 5) Planned Social Change, 6) Interdisciplinary Seminar, 7) Community Involvement, and 8) Organizational Behavior. Courses 2-7 are taken by graduate students in business, community planning, education, group communications, psychology, and sociology.

Research and Development Projects

The institute is currently involved in four major research and development activities:

1. Department of Architecture. This project involves an in-depth analysis of the educational program and administrative operation of the Architecture Department. Interviews were conducted with thirty-three members of the staff. Staff members also completed a questionnaire dealing with the operation of the department.

Institute staff members are working with architecture on the application of the research findings to program and administrative operations. We are also serving as consultants on classroom teaching, meeting effectiveness, and orientation workshops for faculty, staff, and students.

2. Graduate Intern Program. This project involves providing guidance and counseling for thirty graduate interns seeking masters degrees in eight arts and sciences departments, the College of Business Administration, the College of Education, the College of Engineering; consulting with graduate faculty and twelve academic departments regarding curriculum design and teaching methods to be used in the intern program; designing and implementing a fall workshop for fifty graduate faculty members and students on "Problems and Relationships in Higher Education," and providing for the selection and evaluation of the intern applicants. (This program was started in 1966 to provide equal educational opportunity for minority students wishing to attend a graduate school.)

3. Department of Pharmacy. This project is concerned with the development of decentralized pharmacy services in General Hospital, the development and introduction of the pharmacy technician role in the pharmacy, and the development of curricula for a two-year associate degree for the pharmacy technician. The project extends over a three year period from 1970 to 1973.

4. Development for Teaching Assistants and Faculty. This project includes design and implementation of training programs for teaching assistants and faculty, the design and implementation of evaluation instruments for the assessment of effective teaching, participation in the design, implementation, and evaluation of new approaches to teaching (i.e., interdisciplinary, discussion, simulation, media, instrumentation, etc.), and the preparation of literature on approaches to teaching-learning process.

The institute's primary focus is within the university. Nonetheless, consultation and talks are provided on a limited basis for other school systems in the area. Consultation is also provided for other institutions of higher learning (i.e., Bimidji College, North Central Regional Education Program, and Drexel Institute of Technology.)

B. The institute's activities can and do originate in any one of the following ways: 1) We seek foundation support and ask one or more departments to join us on a project (i.e., The Graduate Intern Program). 2) Academic departments seek foundation support and ask us to join them (i.e., pharmacy project). 3) Departments and or individuals ask us for assistance and we respond. 4) We sponsor seminars and workshops on teaching and learning and ask others to participate. 5) Client groups tell others of our work and this leads to requests (i.e., Department of Architecture). 6) Individuals read about institute activities in our newsletter or talk with individual staff members. Initiative stems from a myriad of sources and individuals (i.e., faculty, students, administrators, counselors, etc.)

The results and or reports of our activities can take any of the following forms: 1) We might receive a thank you letter from a participant at a workshop we run. 2) Write-ups of workshop designs which we feel would be especially helpful to others are distributed to relevant individuals on campus. 3) Research reports (i.e., McMicken Honors Program, Honors Reading Program, Philosophy Department study) are distributed to the client systems and relevant administrators with the permission of the client. 4) Institute activities are regularly reported in our quarterly IRTHE Newsletter which goes to campus faculty and administrators and to institutes at 250 other university and colleges. 5) An annual report is prepared and distributed on campus to key personnel (250 copies).

Dissemination of the newsletter and the annual reports have increased institute visibility at the university and off-campus. Each new issue of the newsletter is usually followed by six to ten new requests for assistance. We suffer from an economy of abundance in that there are almost always more requests for our skills than we can handle. We try to explore all requests for help but must necessarily delay or seek additional funding or staff for a request of a major nature.

We receive new information via attendance at the annual AAHE Conference, from publications in higher education, ERIC, and interested friends who send and or tell us about things they have seen, heard, or experienced.

C. Our services are available to virtually all groups and individuals on campus and used by a broad segment of the same. Usually individuals call and/or stop at our office and ask for assistance. Beyond the types of requests already listed above, individual faculty, students, and administrators make extensive use of our library of 200 or so books and 400 or so articles on higher education.

The major incentives for using our services are that we are cooperative and approachable and useful and helpful in solving problems.

D. We feel our activities in the areas of development for teaching assistants and faculty, special innovative programs like the Graduate Intern Program, and organizational development for academic departments have been the most effective and long lasting of our efforts. Each of these programs have attempted to focus department attention more directly upon the teaching-learning process. One way we measure the results of these programs is by observing the extent to which the participating departments begin to initiate new activities and translate their learning to other aspects of their operation.

This has happened in all cases. Our shortest lasting and least effective activities have been one-shot talks or workshops with departments or groups. (These have served as a positive public relations value for the institute). The sense in which they are shortest lasting or least effective is that they have not led to further, longer-term activities. We are not, however, concerned about this because we feel strongly about the principle of volunteerism. Unless a client system is committed to experimentation and innovation, we do not feel their efforts or ours would be very effective or gratifying. In other words, we do not believe in working u[illegible]ll. Perhaps, if we had many more resources and fewer willing clients, we would try.

E. Our general activities are reviewed by the university provost, a campus advisory group, institute staff, and our clients. The provost reviews the area of our activities and our priorities. The specific results of projects are reviewed by the institute staff and our clients. Criteria employed in the review of our work are the relevance of the activities to the improvement of the university, the extent to which the work fosters, demonstrates, or implements innovation, and the extent to which the client finds the work helpful and useful. The primary advantages of this approach are that the client has a choice about using our services, can influence the nature of the activities, and can collaborate in the process.

IV. Problems

Perhaps the best way to respond to your question concerning problems and needs is to indicate two recent actions at the University of Cincinnati that will have significant implications for the future development of this institute. The first is the choice of Dr. Warren G. Bennis as president-elect of the University of Cincinnati effective September 1, 1971. Those who are familiar with the publications of Dr. Bennis (**Personal and Organizational Change Through Group Methods: The Laboratory Approach** and **The Temporary Society**) are aware of his basic commitment to planned social change in organizational life. Second, the University Senate on April 23, 1971 recommended to the president of the university that a systematic evaluation and review of all courses, instructors, programs, departments, and units of the university be undertaken by the Office of the Provost in collaboration with IRTHE in order to obtain and maintain intelligible and operative feedback in the development of the university. It is anticipated therefore that the functions of this institute will increase dramatically both quantitatively and qualitatively in the years ahead.

DIVISION OF INSTRUCTIONAL RESEARCH AND SERVICE

Florida State University

Robert G. Stakenas

I. Background and Institutional Climate

History of the Organization

The Division of Instructional Research and Service (DIRS) was established in July 1968. The purpose of the division was to improve the overall quality of the university's instructional program. The rationale for creating DIRS stemmed from numerous factors. Student unrest in higher education seemed to be related to the quality of instruction being offered to students. Related to this was the belief that faculty are not prepared to teach large groups of students because they do not receive systematic preparation for college level instruction. There were several units already on campus with the potential to assist faculty to improve student learning but these units existed as separate, uncoordinated administrative entities. The creation of DIRS was thus intended to provide operating economies through combining already existing units into a single administrative organization which could launch comprehensive and coordinated attacks on instructional problems and provide one-stop assistance to faculty members.

Units which existed prior to the formation of DIRS included the Media Center, University Testing Service, Institute of Human Learning, Computer Assisted Instruction (CAI) Center, and Center for Research in College Instruction in Science and Mathematics (CRICISAM). Two of the units were renamed when DIRS was formed. The University Testing Service was retitled Office of Evaluation Services to indicate a broader scope of activities. The Institute of Human Learning was renamed the Research and Development Center. The new title implied a new function, research and development in instructional methods and materials. After a brief period, it was retitled the Instructional Development Center to denote more clearly its mission.

In the fall of 1970, DIRS was reorganized internally to further enhance its functioning. The structural changes involved creating three associate director positions with clearly delineated areas of responsibility. These subdivisions include: Instructional Research, Administration and Personnel, and Instructional Development and Service.

Functions performed by the associate director of administration and personnel are those implied by his title.

Units in Instructional Research include Departmental Studies Special Studies, CAI Center, and CRICISAM. The Departmental Studies unit conducts evaluations of academic departments upon their request. The evaluations analyze all aspects of departmental operation and lead to the development of long range plans relating to departmental personnel, programs, and budget. The Special Studies unit conducts studies of the

university's instructional program for the central administration. This includes studies on utilization of instructional resources, costs of differing instructional models, the total educative impact of the university on students, etc.

The CAI Center is a research and development laboratory dedicated to investigating how computers can support instruction. Studies done by CAI Center personnel have dealt with the management and programming of instruction in courses in college chemistry, physics, social welfare, teaching reading and mathematics to disadvantaged school children, sequential testing, etc. Although faculty are encouraged to undertake instructional projects with the center, it cannot provide support on a no-cost basis in the amount needed for routine instruction of students. CAI Center projects are predominately funded through external grants and contracts.

CRICISAM represents the common interest in undergraduate instruction of seventeen universities and colleges in the southeastern United States. Its objectives are to provide a center for the investigation, development, and dissemination of new materials and techniques of instruction in various fields of science and mathematics. Faculty members from member institutions spend periods ranging from a few days to a few months as visitors. During this time they work on projects of their own or study some of the ongoing work.

The remainder of this paper will focus on Instructional Development and Service because this subdivision has as its primary mission the improvement of instruction at the university. Units included in this subdivision are the Instructional Development Center, Office of Evaluation Services, and the Media Center.

The number of staff members employed in these units in 1968 and currently can be seen in the following table.

Department	Year	Faculty	Staff	Research Assistants*	Student Assistants*	Total
Instructional Development Center	1968	2	1	3	2	8
	1971	5	1	5	3	14
Office of Evaluation Services	1968	1	3	3	—	7
	1971	1	3	2	2	20
Media Center Instructional Development and Production	1968	3	14	2	20	39
	1971	2	20	—	29	51

* Part-time employees working from 12 to 20 hours per week.

Initial and current budgets are presented in the table which follows. Amounts listed under salaries include payments to faculty, staff, technical personnel, etc. Part-time employees such as graduate and student assistants have been included under operating expenses; this category also includes supplies, telephone, etc. Capital funds were used primarily for purchase of office, television, and audiovisual equipment.

Department	Year	Salaries	Operation	Capital	Total
Instructional Development Center	1968	$45,7000	$14,900	$ 1,000	$ 61,600
	1971	$96,000	$32,700	$ 1,300	$130,000
Office of Evaluation Services	1968	$30,100	$22,500	$ 1,000	$ 53,600
	1971	$23,300	$21,500	2,500	$ 47,300
Media Center Instructional Development and Production	1968	$63,000	$55,200	$46,800	$165,000
	1971	$84,700	$61,700	$21,000	$167,400

Institutionalized Procedures for Recognizing Effective Instruction

Although services may be available to assist faculty members to improve instruction, other conditions must be present if they are to approach this task seriously. One essential condition is recognition and reward for good teaching. At Florida State University this is accomplished in two basic ways. One is to grant faculty an award on the basis of student nominations and review by a faculty committee. The Coyle E. Moore and George Miller awards are examples of this and have been in existence for a number of years. The Standard Oil Company has recently sponsored three cash awards for excellence in teaching also. These awards vary from $500 to $1000. The second way in which more effective teaching is encouraged is through the Council for Instruction Summer Grant Program. Faculty members submit proposals for course improvement. Awardees are given full released-time during the summer term to work on the course development project described in their proposal. Approximately fifteen such awards have been given annually since the beginning of this program in 1963.

During the past year the Board of Regents has stated that faculty being considered for promotion and tenure must present evidence of teaching effectiveness. Although procedures for accomplishing this have not been standardized, there appears to be movement toward recognizing and rewarding effective teaching at this university. This movement will not reach fruition, however, until all academic departments weigh teaching effectiveness more heavily in their own reward structures. Although some departments already do this, they seem to be in the minority.

II. Structure and Function

Organizational Objectives

As stated earlier, the purpose of DIRS is to assist the qualitative development of the university's instructional program. As originally conceived, the means for accomplishing this goal are through (1) providing services ranging from test scoring through design and production of instructional methods and materials and (2) research, development, and evaluation studies of the instructional programs of the university. Over time, our basic objective has not changed nearly as much as our conception of how it can be attained. For example, one operational goal is the wide spread application and use of validated methods and materials in the university's

instructional program. Before this can be done, academic policies which promote and support more effective teaching and learning will have to be established. Needed policy changes include nonpunitive grading systems which would allow students to move at their own learning rates to achieve specified proficiency levels; granting credit by examination; new ways for getting into and out of courses that are based on individual learning models, etc. It now seems clear that there is a subtle and challenging role to be played in assisting those who advocate such changes to persuade the faculty and administrators who ultimately will approve and implement such policy. In our view, widespread improvement of the instructional program will not take place until it is undergirded by a set of policies which promote and facilitate practices which are sound from an educational and behavioral science point of view.

Organizational Relationships Within the University

DIRS is an independent division of the university. It reports to the vice president for academic affairs, and its director serves on the Administrative Council which includes the academic deans and vice presidents. The subunits are analogous to academic departments although none offer instructional programs producing college credit. Faculty research associates hold part-time appointments in departments related to their academic specialties. Although their salaries are paid in full by DIRS, faculty research associates are released to academic departments on a quarter-time basis in exchange for rank and tenure.

Having divisional status serves an important function within the university. It allows the director to be a coequal with the other deans in terms of status and access to the vice president for academic affairs. This permits the director to compete for resources on a basis equal to the schools and colleges. This is also true in terms of exerting leadership among the deans.

The Council for Instruction serves as an advisory group to the director of DIRS. The council consists of twelve members of the teaching faculty appointed by the president for three-year terms. In addition to its advisory role, it conducts an instructional improvement grant program for faculty members.

There are no well-defined academic or service departments similar to units in DIRS other than the program for training instructional systems specialists provided by the Department of Educational Research. We have worked cooperatively by employing their advanced students as part-time assistants. This relationship has been facilitated by the fact that many of our research associates hold academic appointments in that department.

There have been and continue to be attempts to establish programs and facilities which could compete with the services which we offer. These efforts have been hampered by the general lack of funds for establishing new programs.

Facilities

Instructional Development and Service units are currently housed in three locations. Plans are underway to move the Office of Evaluation Services from its present location in Kellum Hall to the Media Center where the other instructional service units are located. This move will provide two advantages:

(1) better coordination between instructional development units; (2) closer access for most faculty desiring to use the test scoring service.

The Office of Evaluation Services has three faculty and administrative staff offices, work spaces for two secretaries and two graduate assistants, and a machine room which contains an IBM 1230 optical scoring machine and two IBM key punches.

The Instructional Development Center which is housed in the Media Center occupies five faculty offices, a secretarial office, and work stations for five graduate and three student assistants. The center also maintains a small library which loans to faculty members reference materials on instructional design, simulation, test item writing, college teaching, current issues in higher education, and monographs on research on the impact of college on student development.

The Media Center includes one faculty office, three staff offices, a film library of over 5,000 titles, a booking office, audiovisual equipment distribution center, photography and graphics production laboratories, audiotape duplication service, and an electronics maintenance shop. Plans are currently underway to build a recording studio and a demonstration classroom for staging prototype projects and instructing faculty in use of audiovisual equipment. The Media Center is responsible for maintaining a listening and viewing area which is housed in the main library. It includes forty multimedia learning carrels which are used for testing developmental materials and for distributing supplementary individualized learning materials in courses requiring this type of capabiltiy.

The Instructional Television facility is administratively attached to the Media Center. It is located in Dodd Hall in close proximity to the Media Center. There is one faculty office and three office spaces for production, secretarial, and technical personnel. A large space is currently being renovated to accommodate a fully-equipped production studio complex. The ITV unit also operates a twelve-channel closed circuit system which links sixteen buildings and fifty viewing areas.

All facilities, with the exception of the listening and viewing area in the library, are under direct control of instructional development personnel. Although there are unsolicited requests for graphic and photographic work, large instructional development projects have first priority regarding production.

All graphic, photographic, and television production equipment is under our direct control. Audiovisual equipment available for loan to faculty for regular classroom instruction is also included in our inventory. There are some individualized learning centers using multimedia carrels which are under the control of the departments which use them. We anticipate that equipment in the centralized listening and viewing area will become the responsibility of the library.

A point needs to be emphasized concerning control of equipment, production capabilities, and organizational structure. Initially the structure of DIRS tended to be horizontal with all units reporting directly to the director. This arrangement made it difficult to articulate production capabilities because channels of authority required involvement of the director. As a result, procedures for handling difficulties were time consuming. Under the

new structural arrangement, all instructional development and production capabilities are under the supervision and control of a person who is directly involved in the instructional development program. This is the associate director of Instructional Development and Service. Since the associate director is constantly aware of the needs of each of the programs and projects, he is in the best position to see to it that their needs are adequately met by the supporting production and service units.

Funding and Budget Categories

Financial support for subunits engaged in Instructional Development and Service comes from general university funds budgeted on an annual basis. Insofar as possible, the services of these units are offered without charge to faculty members who solicit help on instructional problems. When charges must be made, they are for costs of materials which may be involved. Salaries and overhead costs are borne by the university.

Although there has been no administrative mandate to seek outside funds, there are reasons for doing so. The productivity of the instructional development program will depend upon finding incremental resources for purchasing equipment, funding developmental costs, providing released-time for faculty to design and produce materials, etc. Since these costs cannot be generated through existing funding mechanisms which are based on productivity formulae, they will either have to come off the top of the university's budget or be obtained through outside funding. With state funds becoming more limited, it will become necessary to support the instructional development projects with external funds if their number is to increase in relation to faculty interest and instructional need.

Presently there are few discretionary funds that can be identified as such. Instructional development units set aside small amounts of expense money to be used for producing prototype units to acquaint faculty clients with the process and to determine the feasibility of the instructional concept. Beyond this, funds to support major development projects are obtained through negotiation with the vice president for academic affairs, deans, department heads, and alumni foundation.

The scheduling of major projects is in accord with the following guidelines. Preference is given to lower division undergraduate instruction, to departments which produce the greatest number of quarter hours at that level, and to projects which have the greatest prospect of serving as models or demonstrations of effective instructional practices.

The present budget for the three units in Instructional Development and Service is approximately $344,700. Major categories include: (a) Salaries and Wages; (b) Other Personal Services (e.g., graduate and student assistants); (c) Expense (e.g., supplies, telephone, etc.); and (d) Capital Outlay. Salaries and wages comprise the largest portion of the budget, the amount being 59 percent. OPS funds account for 18 percent of the budget while Expense and Capital Outlay account for 15 and 8 percent respectively.

Although in operation just three years, the budget has increased from $280,200 to $344,700. It is noteworthy that manpower costs (salaries plus OPS) have increased from 66 to 77 percent of the total budget. However, this should not be too surprising since resources of a service organization tend to be concentrated in the personnel area. Capital Outlay for outfitting ITV and

other production facilities was initially high, but tended to reduce somewhat relative to overall personnel costs. It seems clear that manpower costs will dominate the budget of an instructional development program.

Internal Structuring and Staff Background

The internal organization of Instructional Development and Service is as follows. The associate director supervises the three units, i.e., Evaluation Services, Media Center, and Instructional Development Center. He also serves as director of the latter unit. The Media Center has three area coordinators who likewise report to the associate director. Insofar as possible, decision making is based on inputs from all levels concerned with a particular issue. We attempt to use informal channels of communication as much as possible since this provides the flexibility needed for a production effort of this type.

Priority setting for the instructional development program has been done by the director of DIRS in consultation with members of the organization. This has occurred largely because of the director's broad experience in the university and the perspective which he is able to maintain by virtue of his seat on the Administrative Council and working relationship with the vice president for academic affairs. An important point to bear in mind is that maintaining a viable instructional development program would be extremely difficult without having the leader of the organization involved in the administrative processes of the university at its highest levels.

In the main, consultations with faculty clients are carried out by doctoral level personnel who also have academic appointments. The academic appointments are felt important in order to maintain credibility with faculty clients. Major functions served by doctoral level personnel include program leadership, consultation, and program administration. Presently there are seven professional staff with either a Ph.D. or an Ed.D. These degrees reflect training in educational psychology, social psychology, communications, instructional development, and media. Administrative personnel in the Media Center have master's level training in library science and audiovisual education. Production and technical staff have either baccalureate degrees or certificates from technical schools in the area of their speciality such as art illustration, photography, electronics repair, television production, etc. In all there are thirty-two full-time faculty and staff personnel.

Part-time graduate and student assistants are relied upon heavily. The number this year is forty-one. They function in a number of capacities. Graduate students assist the faculty level personnel in executing major development projects by consulting with faculty clients on course design, media design and production, data collection and analysis for project evaluations, etc. Student assistants are largely assigned to clerical tasks, equipment pickup and delivery, inspecting and shelving films, assisting in the graphics and photo labs, etc. Although it would be preferable to have full-time employees serving the functions described above, it is extremely difficult to obtain permanent positions for these purposes, whereas funds to hire part-time assistants are more readily available.

III. Activities

Time Allocation and Service Activities

The proportion of time devoted to administration, teaching, instructional development, and other services varies a great deal from staff member to staff member with one exception. All are expected to devote a quarter of their time to the academic program of the department in which they wish to hold rank and tenure. Those with a designated administrative position devote from 40 to 75 percent of their effort to it. Faculty research associates primarily engaged in instructional development may devote close to 75 percent of their time to consulting with faculty on a short-term basis or assisting clients who are intensively involved in major instructional development projects. Although we are responsive to requests for speeches and workshops, they take up less than 10 percent of the expended effort.

Activities given highest priority are those dealing with major instructional development projects and providing standard services to faculty. Administrative activities are viewed as a means to facilitate the instructional development program; therefore it is difficult to assign anything but a high priority value to them. Since teaching responsibilities are determined jointly by the research associate and his academic department, the matter of priority rests with the faculty member and how he wishes to use the 25 percent released-time to further his academic career.

Faculty research associates teach courses in a variety of areas including social psychology, concept learning, use of tests in teaching and guidance, descriptive statistics, educational psychology, instructional technology, instructional television, and graphics. All classes, except for the one in graphics, are at the graduate level and are open to students throughout the university.

Instructional research and development projects are typically of two types: (a) major course revisions; (b) consultations which result in changes in teaching practices and or design and production of supplementary learning materials. Major course revisions to date include Geology 102 and Geography 310. Both courses were changed from a traditional lecture format to individualized learning based on the audio-tutorial approach. Projects falling in the second category have been completed in a number of areas including: instruction in class oboe, bassoon, and French horn; harp; piano pedagogy; music literature; mass communications; science education; introductory economics; clothing design; interior design; English literature; library science; introduction to mathematical statistics; testing and evaluation in the classroom; use of tests in teaching and guidance. Major projects recently begun include: managerial accounting; a computer managed course in religion; and methods and materials on college teaching. The latter project will serve two groups: teaching assistants preparing to teach courses on campus and students preparing to assume faculty positions in community colleges in Florida.

The Instructional Development Center provides services in two broad areas, instructional development and instructional research. The objective of the development program is to improve the effectiveness of instruction by assisting faculty members to write and use instructional objectives, to design

and produce learning materials which can be used for group-based and or individualized instruction, and to assist departments in revising their objectives and course offerings. The research emphasis focuses on formative and summative evaluation of instructional projects. An important facet of the research is analysis of costs and benefits to determine the feasibility of widespread implementation of particular instructional models. The center also functions as an information dissemination agency. It prepares and distributes copies of the *Instructional Development Handbook* and locally produced tape-slide presentations on instructional development. It maintains a lending library of instructional materials on writing objectives, test item writing, instructional design, educational simulation, college teaching, and research monographs on the impact of college on student development. The center also presents university-wide symposia.

The Media Center supports instructional development in a number of ways in addition to supporting the academic program of the university by providing audiovisual equipment and a film library of over 5,000 titles. These support services include photographic and graphic production services, audiotape duplication, and assistance in the selection and use of media. Charges for production services are based on cost of the materials used. The center also maintains a small listening and viewing area in the main library. It contains forty multimedia carrels which are used for testing experimental versions of instructional materials and for distributing supplementary individualized materials for a number of courses. The Media Center is also responsible for instructional television, including the production and distribution of classroom lectures and supplementary materials. Charges for producing televised materials are usually limited to the cost of videotapes involved.

The primary function of the Office of Evaluation Services is to assist faculty members in evaluating student learning. This is most often accomplished through individual conferences. It supports the instructional development program by assisting faculty clients and instructional development faculty to design appropriate evaluation procedures and to provide automated test scoring and test analysis services. IBM answer sheets and various types of standard data analysis programs are available to faculty at no cost. The office administers admission tests for entry into college or graduate school, supervises the administration of foreign language tests, orientation tests, etc., and serves as a regional testing center for national testing agencies. Office staff also conduct research on measurement problems associated with instruction and assist faculty members with the development of aptitude, admission, and placement tests.

The primary target population of the Instructional Development and Service programs is undergraduates at Florida State University. Other populations served would include elementary and secondary school children in the region who view films rented from the Media Center's library and residents in the area wishing to take tests for college admission, etc.

Project Initiation and Dissemination of Information

Instructional development activities are stimulated in a variety of ways. In most instances projects arise from initiatives taken by individual faculty members. For example, they may submit a proposal to the Council for Instruction for a course improvement grant. Faculty members often call on us to assist them in formulating their proposal. Recipients of council grants are systematically contacted by us to apprise them of our services if a working relationship has not been established previously. In other instances, faculty members may call on us to assist them with specific problems because they have heard about our services in one way or another. Another way in which activities become initiated is through active solicitation on our part. Our initiative is usually motivated by a problem which is germane to the university's instructional program but for which there is no spokesman. After identifying a faculty member who has shown prior interest and capability, we attempt to nurture his interest by offering him assistance and resources.

Results of our programs are usually development of instructional methods and or instructional materials. It is our aim to publish descriptive project reports where appropriate. However, we have been handicapped in doing so because we lack an editor to oversee the publication. Thus far dissemination of project results has been through our newsletter, *Notes from DIRS*. A new series is to be initiated and will be called *DIRS Reports*. The latter series will include final reports of projects and will likely undergo limited distribution. On the other hand, *Notes from DIRS* is sent to all faculty members on campus and to everyone off campus who has requested to be placed on the mailing list.

In addition to *Notes from DIRS*, we send brochures describing our services to all faculty at least once a year. In the fall of 1970 a new program was initiated whereby all new faculty members received a personal call from a DIRS representative and materials describing the variety of services available at no charge. Another mechanism that has been quite useful has been the presentation of campus-wide symposia. Topics covered have included the training and supervision of teaching assistants, instructional innovations, and individualizing instruction in higher education. These presentations have been all-day affairs with portions of the program being repeated so that faculty could attend at their own convenience. Special attractions have included brief talks by nationally known experts and panel discussions by members from the university administration on topics such as the need for educational reform, individualization of instruction, and the economics of higher education.

No systematic evaluation has been done regarding our information dissemination program. However, we have noted that attendance at our campus-wide symposia has increased steadily. We also receive more requests for consultation than we can adequately handle. This leads us to believe that our dissemination efforts are somewhat effective.

Acquisition of new information relevant to program activities is done in a number of ways. Attendance at national meetings has been one mechanism. Another has been through site visits to other campuses known to be innovating in certain ways. On several occasions faculty research associates have attended training conferences to learn about new techniques and to

develop new skills. We regularly do computerized literature searches in response to faculty requests for assistance. We also systematically review new publications and add them to our instructional development library to keep it up to date. These ideas are brought into play whenever they appear to be relevant to a particular instructional development project.

Obtaining Service

Individual faculty members tend to be our clients. A faculty member may call any member of DIRS to discuss instructional problems and needs, proposed development projects or whatever. The DIRS faculty member called can arrange for full participation by all DIRS units whenever broad service is needed. Most services such as short-term consultation, providing classroom films and projection equipment for classroom use, test scoring, and photographic and graphic production are provided on a first-come first-served basis.

Incentives for faculty involvement are varied and complex. Some become involved because they seriously desire to improve the quality of their instruction. Others are motivated to seek a Council for Instruction summer award which allows them to satisfy two needs, i.e., summer employment and course improvement. Still others seek help to solve instructional problems which seem to be related to declining student enrollments in specific courses. Solutions to this type of problem are vital to a department's functioning since it is funded on the basis of credit hour productivity. General criticisms directed at higher education are also a stimulus for requests for service.

Program Impact

The instructional development program has been in operation for less than three years; instructional research and development is a slow and time-consuming process. In light of this, it is premature for us to speak in terms of long lasting results. We are still in the process of evaluating and analyzing the cost effectiveness of our major projects. Some support is still provided for their operation. We will know a great deal more about long lasting effects after the evaluation results have been published and the courses are completely financed by the participating departments.

Impressionistically, our most effective activities seem to be instructional development projects and consultations. The symposium presentations have been well received, but their chief function is interest building. Least effective activities seem to be general purpose workshops for faculty and consultations with departmental committees. There appear to be two reasons for this. One is that professors find it difficult to work cooperatively on instructional development problems because their academic activities are oganized around individual vested interests which they are reluctant to give up or share. The second reason appears to be motivational. For example, workshops and group consultations are usually initiated by one or two people rather than by the group as a whole. In a sense, these groups are a captive audience with only nominal interest in the activity. Individual consultations appear to work better because the client is the one who initiated the contact and is seeking answers for a specific problem.

Process and Product Evaluation

We have attempted to assess ourselves both in terms of process and product. For example, consultants have been invited to examine our procedures and internal functioning. This helped us to move toward better articulation of the different service components. A series of faculty meetings was held last summer for the purpose of reviewing the effectiveness of our internal processes. Systematic evaluations are being done on our major projects. These have not been completed as of this writing. Criteria which we use include: (a) number of students served after the course is considered developed; (b) student achievement of course objectives; (c) the content validity of the course; (d) student attitudes and satisfaction; and (e) cost effectiveness of the instructional model developed.

The criteria described above have been chosen for two fundamental reasons; they speak to the question of educational quality and the economics of mass higher education. In other words, "How can large numbers of students be served with decreasing amounts of human and financial resources while maintaining acceptable levels of quality?" It seems clear that both aspects must be considered concurrently because they are so highly interrelated. The advantage of this approach seems to be its utility in making decisions on how to organize and use instructional resources. Another advantage is the empirical nature of this approach. Intuition and tradition are supplemented (and at times contradicted) by real world data. The disadvantages, if they could be termed that, are that this approach is time consuming and expensive to implement. Moreover, there are methodological problems yet to be resolved with regard to cost effectiveness analysis. Our point of view is that the advantages far outweigh the disadvantages. We do feel a sense of urgency in achieving progress along these lines lest our critics become impatient for documented reports of progress toward improving the quality of instruction.

IV. Problems and Needs

The major problem facing us is a general resistance to change within the structure of higher education itself. This may sound contradictory in light of previous comments since the reader has likely gained the impression that our programs have been successful because they have resulted in changes in instructional practices and materials. Yes, we have enjoyed success, but these efforts are miniscule and have barely scratched the surface when the total instructional program is considered.

Resistance to change manifests itself in a number of ways. One form of resistance stems from the faculty's seeming lack of desire to experiment with teaching methods and instructional technology. This seems to be related to the way in which university funds are generated, i.e., on the basis of productivity formulae involving student credit hours produced. This funding procedure pays for a process rather than a product. Hence, there is little incentive to experiment with instructional methods that may replace faculty members or require kinds of resources not generated by the basic funding procedure. Departmental value systems which emphasize scholarly productivity and minimize teaching effectiveness also present a barrier to faculty desiring to engage in serious instructional development activities.

We are now apprehensive about our ability to promote change through information dissemination and course development projects alone. It is too time consuming and ineffective in producing widespread change. Rather, it now seems to make more sense to work on changing academic policies which will require faculty members to think and behave in new ways.

Existing departmental value systems may create problems for instructional development faculty striving to earn promotions and tenure. Since DIRS faculty research associates must hold academic appointments for purposes of rank and tenure, they find themselves working at cross puposes at times. This could result in high turnover for us if faculty research associates are unable to meet departmental standards for promotion and tenure. To guard against this, instructional development faculty are urged to plan their service activities in a way that will lead to some type of scholarly productivity. With increasing demands for service, this is not always possible.

One area still bothersome is that of meaningful evaluation and cost effectiveness analysis. Traditional evaluation designs are not always relevant because of a lack of adequate baseline data, or the creation of courses which have no prior history. Without such data for comparison, it is difficult to argue that the revised course is doing as well as, better, or poorer than this course in some other format. To guard against this problem, we are attempting to collect appropriate baseline data as soon as new projects are identified and to implement revised procedures and materials on a limited basis while continuing to run the original course in parallel if at all possible.

We have had some coordination problems but these have been eased by a structural reorganization as well as consolidating personnel in one location. We have found that keeping personnel in close physical proximity greatly facilitates communication and articulation of activities.

The university is now moving into a period of reduced financial resources. This may mean personnel and financial cutbacks which could reduce our level of productivity. One way to deal with this would be to seek outside grants for supporting our large instructional development projects. Being a relatively new organization on campus, our greatest continuing need is for administrative support so that we will be able to demonstrate the worth of our services to the instructional program of the university.

OFFICE OF INSTRUCTIONAL RESOURCES

University of Illinois, Urbana

Charles J. McIntyre

I. Background and Instructional Climate

A. Prior to the formation of the Office of Instructional Resources there were two organizations with somewhat overlapping missions. One was the Office of Instructional Television (which I headed), and the other was the Office of Instructional Research. In 1964 these two offices were merged. The two offices had a combined staff of about seven people. The Office of Instructional Television had a budget of about $86,000, and the Office of Instructional Research had a budget of about $62,000.

B. There was really very little going on here with reference to improvement of instruction prior to the time that the Office of Instructional Resources (OIR) was formed. I can think mainly of the Motion Picture Division within the Colleges of Communications, the photo-lab which is attached to the Office of Public Information, and the film projection service which is administered by the Physical Plant. There was also at that time a group working on computer assisted instruction and this was housed in the Coordinated Science Laboratory. This has become a very significant component not within the jurisdiction of OIR. There has been very little shifting around since the formation of the office. We have seen our task in this particular context as: (1) cooperating fully with those other agencies already in existence and (2) developing services not already available.

C. 1. Our Measurement and Research Division has developed and administers a Course Evaluation Questionnaire. Although this is a private matter between our office and the instructor who is rated by his students, those who achieve high rankings frequently present this as a significant item in their annual report, and it may thus help them to get promoted.

2. Various student bodies in several of the colleges select a "teacher of the year."

3. We have a system of Summer Instructional Awards which are given on the basis of a formal proposal to spend one's time during the summer to significantly improve some course upon which he is working. About a dozen professors get one of these awards each year. The award recipients are chosen by a faculty committee. A professor with such an award has no other responsibilities for that two months than to implement the proposal. In the fall that person who seems to have made the best progress and use of his time is awarded a $1,000 bonus.

II. Structure and Function

A. The Office of Instructional Resources is broadly concerned with the improvement of instruction to assist the faculty in the use of new techniques and media, to pedagogical advisement, through the measurement of student achievement and other instructional outcome and through studies of the

influence on academic achievement of factors from within and outside the classroom. I have a tentative idea in my head as to how the organization ought to grow, and there exists a ten-year plan. There has not been much change in our long-range planning except that which is dictated by a lack of money. We would like to start an auto-tutorial laboratory and a media information service. These, along with our acute need to add to the staff in Course Development will be priority items until they are achieved.

B. The director of the Office of Instructional Resources reports to the vice chancellor for academic affairs. This is helpful in that the vice chancellor can see and act upon our needs and contributions in terms of the academic program of the entire campus. Being attached to the vice chancellor's office may in some cases result in our evaluation projects being regarded as "spies" for the central administration. In fact, however, our study reports are always submitted only to the requesting agency or individual and given further dissemination only if those parties desire it.

C. OIR is divided into four main components: (1) Course Development Division; (2) the Measurement and Research Division; (3) Instructional Materials Division; and (4) the Television Division. We are not all housed together The Office of the Director and the Course Development Division are housed in 1,457 square feet of space. The Measurement and Research Division will in a month or two move into a remodeled facility with 5,228 square feet of space. The Instructional Materials Division has 2,887 square feet of space in its main office and 712 square feet of space in an auxiliary office in the College of Education. The Television Division has four studios, the latest of which is quite large and equipped for color. All of the facilities described are under our direct control except the Television Division which is also used for training of students in the use of television and for public broadcasting. Our equipment consists of a terminal connection to the main computer center, a substantial array of A-V facilities, and a television studio which is professionally equipped but only partly under my control.

D. OIR is funded almost entirely from state-appropriated funds. We are not required to seek outside funds although we have from time to time done so. In allotting the budget to the divisions, I usually withhold a certain amount to use for something which comes up later that looks promising. Our present budget is in the neighborhood of $600,000 which we subdivide by divisions and then within divisions. About 50 percent of the budget goes to the Measurement and Research Division, 25 percent to the Television Division, 15 percent to the Instructional Materials Division, and 10 percent to the Course Development Division. Changes over the years have primarily been increases which reflect increased operations or new divisions.

E. The director and the division heads make most of the decisions within the office. A great many of the decisions are made by the division heads, with the more sensitive ones usually being referred to the director. We have approximately forty-five full-time equivalent staff with perhaps a half-dozen more in the Television Division for whom we pay indirectly. Our professional staff members are nearly all Ph.D. or Ed.D. people. The rate of turnover for the professional staff is quite low. Where our turnover is highest is in those instances where we employ married women whose spouses get their degrees and leave. We do some in-service training in order to up-grade personnel. We

do employ students and in a few instances have very well developed in-service training for them.

F. In general there are no offices like this one elsewhere on the campus. A notable exception is in the College of Agriculture where there is a man who does most of the work similar to ours and is on joint appointment with this office. Thus he frequently refers jobs to us which he can not accomplish with his smaller staff and facility capability.

III. Activities

A. I would estimate that about 5 percent represents the propostion of total staff time engaged in administration. A similar amount is engaged in teaching. Fifteen percent in research and development and the remaining 50 percent in service. (Here I am assuming that the development of materials is a service function.) Our priorities are about as follows: service activity first, research and development second, administration third, and teaching last. Our people from the Measurement and Research Division teach courses in statistics and research design. The others are more likely to teach basic audiovisual courses and instructional technology seminars. The students are mainly graduate students but in some cases upper-level undergraduates. Research and development project areas would include such things as the development and validation of a course evaluation questionnaire, research on proficiency examinations, research on grading practices and particularly the characteristics of the students in the pass/fail option which has just recently been adopted here. Service has mainly to do with the development of instructional materials such as overheads, slides, etc., development of television programs, and test scoring and analysis.

B. People seeking our services find us through a number of routes. For example, each of our divisions puts out a listing and description of its functions. A referral may be made from one division to another. Occasionally prominent administrators such as the president or chancellor may mention us in a speech or paper, and the vice chancellor for academic affairs also often will not give special funding for a project until the OIR role and possible involvement is explored. Results usually can only be inferred. (1) Persons who want test scoring and interpretation usually get what they want quickly and come back again. (2) Those who want some typical visual aid usually leave the Instructional Material Division satisfied and are likely to come back again. (3) Course Development is a much longer process which normally runs over several semesters, and its impact is very difficult to measure. However, there are several courses with which we have worked intensively. In the department's opinion the results of the course revision have been beneficial, and there is some data also which suggests that students' acceptance of the course has gone up. Television is experiencing a different situation. On the one hand the number of courses which are essentially lecture demonstrations on videotape has declined quite a bit. On the other hand there has been considerable activity throughout the campus in buying and using small recorders which can be used in the classroom to demonstrate phenomena which are difficult to observe or for self-observation by teachers, people in dramatics, and people in the dance curricula, as examples.

The dissemination of results depends largely upon who initiated the project and their desires. Occasionally the vice chancellor or a committee of the

senate or some such body may ask for some research. In that case we would probably disseminate results rather widely because the requestors desire that. On the other hand we may be asked for help from a particular individual or from a particular department. Indeed, this is the most common form of referral. In those cases the results go back only to the individual or department that requested them unless they would like the results distributed more widely. Information about OIR is distributed in several ways: by letter to everyone on the faculty; by workshops or seminars requested by a department; and sometimes by other individuals who know about us and will recommend OIR to a third party. In any event, people come to us from some source of information, and we do not usually ask them why or where they got their information. New information generally comes to us from three sources: (1) the journals; (2) conventions (AECT, NAEB, AERA, etc.); and (3) personal contact. We act upon new ideas if they seem useful by modifying them to our own program or by passing them on to others whom we think might be interested.

C. Any department, academic or non-academic, may use our services providing it is for instructional purposes. They go about it by calling us on the phone or making a visit to discuss the problem. For the most part the incentive comes from the teacher himself who wants to improve his effectiveness and comes to us seeking help to do so. In many instances they are allotted released time for carrying out their instructional improvement project, and I have already mentioned the Summer Instructional Awards Program.

D. Perhaps the longest lasting result has been the development of the Course Evaluation Questionnaire. Thousands of students use this each year and some departments require evaluation like the"like the CEQ" as a basis for promotion when teaching ability is cited as a reason for promotion. Our shortest lasting results in terms of substantial projects have been in the area of television lecture demonstration disseminated over closed-circuit to hundreds fof students. This has been a diminishing activity over the past three or four years.

E. Everyone and no one evaluates our activities. What I mean by that is that the hundreds of faculty members who use our services undoubtedly leave with a good feeling or with a bad one. Questionnaire surveys of faculty attitudes toward various facets of OIR yield predominently favorable results. Another key evaluator is the vice chancellor for academic affairs who controls our budget and, considering the money pinch we have been in, I think he has treated us very well. His evaluations, I assume, come from contact with other faculty.

IV. Problems

A. A major problem lies in the fact that we have not learned how to use the very powerful medium of television in serving a central role in the teaching process. Secondly, we need to strengthen the Course Development Division with more personnel who are skilled at working with faculty in the process of course improvement and who also know enough about the media to suggest how media might help with the solution of a departmental problem.

B. We need money, space, and people. Under present fiscal constraints, I do not know how much of any of those are going to be available.

CENTRE FOR LEARNING AND DEVELOPMENT

McGill University, Montreal, Canada

Marcel L. Goldschmid

I. Background and Institutional Climate

A. A proposal to establish a university department concerned with studying problems relevant to the improvement of higher education was approved in principle by the McGill Senate at its meeting of April 19, 1967. An ad hoc committee was then appointed to make specific recommendations to McGill's Academic Policy Committee. These recommendations were approved by senate early in 1968. A search for a chairman was then initiated. In June 1969, Dr. M.L. Goldschmid was appointed director, and the centre was finally off the ground. The annual budget proposed by the ad hoc committee was $47,000. The actual allocation to the centre in its first year of operation amounted to almost $70,000. In addition, McGill established an Educational Development Fund of $100,000 in order to encourage experimentation and innovation in the classroom, particularly in large undergraduate classes. Originally, the staff, besides the director, included three assistant professors (two full time, one half time), three research assistants, and a secretary.

B. Before the centre was established, the Educational Procedures Committee, a subcommittee of the Academic Policy Committee, was charged with the encouragement and coordination of educational experimentation, but it had only very limited funds available. It published a bulletin at irregular intervals. Some of the students at McGill began to play an active role with regard to educational reform in 1965. A group of activists under the aegis of the Student Society and the leadership of mathematics' lecturer Donald Kingsbury conducted the "Project in Course Design" in the summer of 1966. This group played a major role in "encouraging" the university to establish the Department of Higher Education.

C. Well defined and generally accepted institutionalized procedures for recognizing or providing visibility to good instruction are lacking at McGill. Methods and criteria used in evaluating a professor's competence in teaching vary from department to department and from faculty to faculty and are generally ill defined and unknown to individual professors. The relative weight assigned to teaching effectiveness when hiring, promotion or tenure are considered also vary considerably in each case. On a few occasions, students (for example in arts and science and engineering) have published course guides which presented their view of professors' teaching effectiveness.

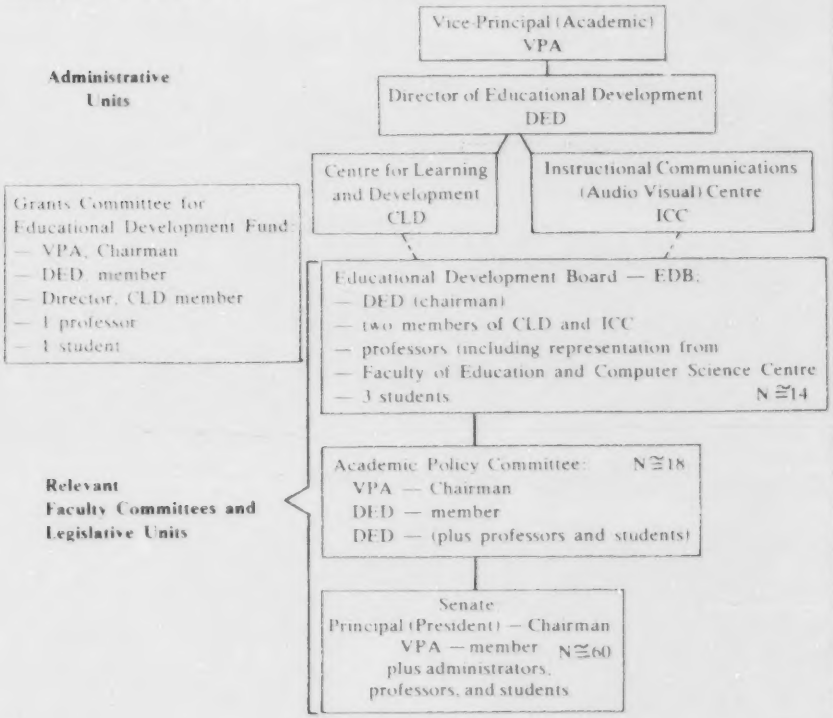
II. Structure and Function

A. The major purpose of the centre is to improve the learning environment and methods of teaching and learning at the university and at other levels of education. In its first two years, CLD has concentrated on university in-

struction with four major objectives: (1) To increase awareness among professors and students of the critical need to evaluate current teaching and learning methods as well as to offer constructive alternatives on both a conceptual and practical level. (2) To consult with individual professors on instructional problems and to assist instructors and students who propose innovations and experimentation, in designing and evaluating new courses and programs. (3) To identify existing university structures and programs which are conducive to educational progress and those which block it, as well as to propose and help develop new structures and programs which will enhance educational reform. (4) To conduct research on relevant issues.

The major activities of CLD in the past two years have attempted to meet these objectives. Recently we have come to the conclusion that we should emphasize the third and fourth objectives in order to achieve more significant overall changes and a more broadly based reform. Intensive work with a relatively small group of individual professors on ordinary day-to-day instructional problems is time consuming and does not necessarily require professional manpower. Extensive structural and institutional changes appear necessary and are potentially more promising with respect to the centre's major purpose.

B. The following chart indicates the centre's place in McGill's administrative structure:



By having to report to the vice principal through the director of educational development, the centre is removed by one step from the top administration. On the other hand it has a spokesman there and cooperation with ICC is facilitated. The Educational Development Board is advisory to CLD and was set up to help coordinate educational efforts across the university in general and among the relevant agencies in particular. CLD proposals concerning changes in the university structure have a relatively long way to go (via two other committees) before they are considered by the university's legislative body (senate). The centre is affiliated with the Psychology Department, but has an independent budget.

C. The centre is located in space allocated to the Psychology Department. A move to larger quarters is planned in the immediate future, since present facilities are inadequate. The centre now occupies four staff offices, one office which is shared by a part-time staff member, graduate students, and research assistants, two secretaries' offices, and a small library. We have requested space for more staff and student offices, a conference room, a workshop room, and experimental classroom. The centre is located in the Biological and Medical Science Complex, off the main campus (about five minutes walking). In addition to office equipment (furniture, typewriters, etc.) the centre owns one VTR and a monitor, two tape recorders, two slide projectors, slides, films, tapes and a good collection of books and journals and rents a time-sharing computer terminal (teletype).

D. An annual budget is allocated to the centre from McGill's operating funds. The centre seeks outside funds for research purposes (for team or individual efforts). An Educational Development Fund of $100,000 was established together with the centre to support experiments in learning and teaching methods. The centre evaluates all applications for financial assistance for the grants committee (see chart) which allocates the funds. The centre's budget for the second years was increased to $82,400 (plus $3,800 for equipment). Due to McGill's severe financial crisis, the budget has not been increased for the third year. Over 87 percent of the budget is allocated to salaries, the other categories include equipment, travel, books and materials, and stationary.

E. The centre's staff presently consists of the director (associate professor), one associate professor, three assistant professors, one research assistant, four graduate students, two secretaries, and part-time help and volunteers. Four of the professors have their Ph.D.'s in psychology and one in educational psychology. The research assistant has a B.A. in psychology, and the students are doctoral candidates in psychology. Only one professional staff has left so far to assume an associate directorship in a similar centre in the Atlantic provinces. All major decisions are made by the group in bi-monthly or special staff meetings. In-service training consists of frequent individual consultations and a regular seminar. With respect to the graduate students, the centre follows an apprenticeship model. The students participate in consultations, workshops, faculty courses, and research projects.

F. Four of the staff members have joint appointments in psychology (faculty of science) and one in educational psychology (faculty of education). Close relationships are maintained with the Instructional Communications Centre

and the Faculty of Education. Recently the centre invited some fifteen professors from a cross-section of the university's faculty to become CLD Associates. The exact nature of this affiliation has not yet been finalized, but the expectation is that the associates will serve as liaison between CLD and departments and provide feedback regarding important instructional problems on campus and the centre's activities. The center staff consult with individuals and groups of professors, departments, and faculties across the university, and the administration.

III. Activities

A. The major activities of the centre are listed below. (For details see annual reports 1969-70 and 1970-71.)

1. Dissemination of Information. The centre coordinates and disseminates written information on educational innovations and the experimental and psychological principles of learning by: **(a)** Maintaining a library of relevant books and articles. **(b)** Publishing a monthly bilingual newsletter. **(c)** Holding seminars and participating in departmental teach-ins and meetings. **(d)** Contributing articles to the McGill newspapers. **(e)** Contributing to professional journals (See list of publications in annual reports).

2. Consulting. A major portion of the centre's work takes the form of consultation with McGill professors and students on instructional problems and innovations in the classrooms. In 1969-70, for example, CLD staff conducted some 240 interviews with instructors and 80 interviews with students at McGill and elsewhere.

3. Faculty Workshops. CLD offers faculty workshops which enable participants to become actively involved in modern educational procedures such as the specification of educational objectives, programmed and computer-assisted instruction, the use of media, student and course evaluations, the techniques of handling group discussions, instructional options, the learning cell, and individualizing instruction.

4. Course in Instructional Improvement. Two CLD courses are offered, one to faculty and one to graduate student teaching assistants with an enrollment of about fifteen participants each. The courses, consisting primarily of self instructional materials, are designed to enhance teaching skills. Data are being collected with an eye toward improving the courses and adjusting them to the specific needs on campus. Two CLD staff members and three graduate students are involved as staff in these courses.

5. Research. (a) As mentioned earlier the university established a $100,000 Educational Development Fund to support experiments in learning and teaching methods. The centre helps design and evaluate applications for financial assistance. By now some twenty projects have been funded. (b) In addition CLD staff are involved in their own research in the areas of cognitive development, instructional options, computer-assisted instruction, learning French, classroom climate, laboratory instruction, and individualizing instruction.

6. Course Evaluation. Another major activity has been the development of resources (e.g., questionnaire items) for course evaluation in an effort to increase student-instructor feedback and to provide professors with valid

information to improve their courses. A course evaluation questionnaire has been tested in a number of classes for research purposes. A system of course evaluation is being developed, including appropriate computer programmes and an instructor's manual.

7. Conference. A major conference on "Instructional Innovations in Higher Education," held at McGill in November 1969, was organized by CLD to acquaint professors and students with modern teaching techniques. A second week-long conference will take place in October 1971 as part of McGill's sesquicentennial celebration.

8. Slide Show. The staff prepared an audio-visual presentation to acquaint educators and other interested persons with the activities of CLD. A second slide show for the October conference is in preparation.

9. Meetings. Staff members attend international, national, and local meetings of major professional organizations and present papers and participate in symposia.

10. Student-Centered Activities. (a) CLD staff consult with individuals and with groups of students. (b) CLD staff helped train volunteers for and consulted with the Student Information Centre. (c) A series of tutor training workshops were offered to advanced undergraduates and graduates who serve as tutors for McGill students in 1969-70. (d) CLD offered specifically designed encounter groups to the incoming freshmen orientation in the fall of 1970. (e) Student encounter groups were run by the centre during both the fall and spring terms in 1969-70. The centre has evaluated this experience in interpersonal communication.

11. Involvement in Campus and Community Activities. CLD staff have been members of the senate, Academic Policy Committee, Board of Studies, Educational Development Board, Senate Committees on Instructional Communications and Information of Communication, Grants Committee, Research and Graduate Studies and Program Revision Committees of the Faculty of Education, and a provincial inter-university committee on teaching methods, among others. We also serve as consultants to or work with UNESCO, various universities, schools and other institutions in Montreal, Quebec, Canada, United States of America, and other countries.

B. The centre's activities are largely determined by its purpose and objectives. With respect to specific content an effort is made to assess the needs and interests of faculty. For example, the workshop themes have been decided on the basis of the responses to a questionnaire sent to all professors. In the case of the CLD courses, workshops, newsletter, seminars, CLD associate meetings, conferences, encounter groups for students, and CLD research, faculty and/or students have been invited by the centre to participate. In the case of consultation, some departmental meetings and committees, we are approached by the faculty.

C. The centre's services and its users have been described in A and B. The incentive for using our services is mostly a desire on the part of an individual instructor to upgrade his teaching performances and or to acquire research funds from the Educational Development Fund. At present little or no pressure is apparent by students or departments upon individual professors to

improve their teaching. Nor are there clearly defined and visible external rewards available for such efforts.

D. Since the centre is only in its second year, it is extremely difficult to discern "long lasting results" of its efforts. A tentative conclusion might be that activities involving groups (e.g., workshops and newsletter) are more effective and efficient than individual consulations. Also, as mentioned earlier, it appears that consultation with larger units (e.g., a department or faculty) or the administration with respect to structural and institutional aspects affecting instruction (e.g., programs, time table, credits, evaluation of students, etc.) are potentially more promising and more in line with the staff's professional qualifications than "technical" consultations with individuals.

E. The evaluation of the centre's activities is severely hampered by the lack of readily available or acceptable criteria of effectiveness. No specific body or group is charged with the evaluation of CLD's performance. CLD staff, however, are continuously engaged in seeking feedback on its activities from the campus. For example, an evaluation of the newsletter has been requested from the readers. Each workshop is assessed by the participants. So are the CLD courses. CLD consultations with faculty are also evaluated by the consultees.

IV. Problems

A. A number of problems the centre has encountered have already been mentioned in the foregoing.

1. Rewards for Effective Teaching. It is difficult to rank the problems in order of importance, but perhaps the most critical one is the relative lack of external rewards for effective teaching. While it is generally agreed throughout the university that the quality of teaching should be considered in the hiring, promotion and tenure of faculty, its importance is seriously questioned by many instructors. As long as an individual professor perceives his career aspirations to be dependent primarily on his research grants, publications, and perhaps seniority, it is highly doubtful whether he will spend much effort in improving his teaching effectiveness. There are many exceptions, of course. Ironically, the impression which is emerging is that it is primarily the better teachers who use the services of the center.

2. Preparation for and On-the-Job-Training in University Teaching. Generally speaking, university professors do not undergo specific training in instruction either before they begin teaching nor afterwards. A professor, then, is entrusted with major responsibilities and a difficult task without proper guidance and assistance. In few, if any, other professions can one find a comparable situation. Perhaps more significantly, while this state of affairs has been known and debated for a long time, it continues to be tolerated without major changes. The same thing can be said about the problem of rewards for teaching.

3. Release Time. If professors are expected to significantly improve their instruction, it is probably necessary to provide them with short study leaves. University teachers find themselves typically pressed for time to carry out their many duties and fulfill their commitments. A major "overhaul" or

updating would therefore probably require a free period set aside for this purpose possibly once every few years. Such an arrangement would also serve to reinforce the importance of good teaching practices.

4. Financial Assistance. The centre has been fortunate in having the support of the Educational Development Fund. Regrettably this fund is almost depleted. It will be difficult to replenish it. Instructors should have at least small sums available on a continuous basis for innovations. This should, however, not serve to make instruction generally more costly, but rather as a further impetus to educational reform. In fact, experimentation which promises to reduce cost in the long run should be more strongly encouraged.

5. Technical Assistance. A small team of instructional consultants such as exist in the centre are unable to provide technical assistance on day-to-day instructional problems to any considerable number of individuals. Nor are they in a position to engage in vital follow-ups and evaluations of implementations. Perhaps an instructional development agency should have two closely related and interdependent services: a consultative service regarding higher level and broadly based problems for administrative units and technical assistance for individual instructors. CLD is now exploring the differentiation and priorities and the possibility of establishing these two types of services.

6. Flexibility of the Instructional System. Repeatedly the centre staff have encountered difficulties in bringing about changes in one course or program which impinge on higher level administrative units. Proposals are entangled, delayed and watered down in a maze of committees, subcommittees, ad hoc committees, and legislative groups. Possibly an officer reporting directly to the principal could be charged with speeding up innovations, experimentations, and instructional changes.

7. New Role of Students. Practically all major principles involved in effective instruction imply fundamental changes in **both** student and teacher roles. If instructors are willing to make an effort and if they have the necessary assistance to improve instruction, a corresponding desire and reorientation on the part of students will be necessary. Many potentially effective innovations have failed because the students have clung to their conditioned role of "passive absorbers." It is therefore essential that attempts to change instruction be concentrated in the first year before students become entrenched in a passive role. Paradoxically innovations are predominantly initiated in the fourth year.

8. Budget. The problem of inadequate funds is not listed last because it is least important, but because every such agency, indeed perhaps every university unit now suffers from it. However, when one considers the purpose of the centre and its resources, one is confronted with a problem of unrealistic expectations. McGill has approximately 1,200 full-time and 600 part-time staff members. This is the "potential clientele" of a staff of four full time and one half-time professionals. The expenditure at McGill in 1970-71 totaled over 47 million dollars (exclusive of research). Of these less than 0.2 percent were allocated to the centre "to improve the learning environment

and methods of teaching and learning at the university." For research the total expenditure at McGill in 1970-71 amounted to 14 million dollars. The $100,000 allocated to the Educational Development Fund to "encourage experimentation and innovation in teaching and learning methods" represent about 0.7 percent of this amount.

A Final Note

Problems such as mentioned in the last section notwithstanding, it is very encouraging to note the expanding concern of universities to improve their educational practices. "Instructional Development Agencies" have been proposed or are being established at an ever increasing number of Canadian universities. Another trend also appears to emerge. Centres such as CLD may increasingly be called upon to provide information regarding various instructional alternatives and their cost-benefits. In the light of stringent economies applied to university budgets, this function could easily assume the highest priority in such centres and give them a new and perhaps more solid "raison d'etre" in the near future.

CENTER FOR RESEARCH ON LEARNING AND TEACHING

University of Michigan

Stanford C. Ericksen

I. Background and Institutional Climate

A. The Center for Research on Learning and Teaching was launched at the University of Michigan in 1962 by the Board of Regents, following the recommendation of the Faculty Senate Committee on the Improvement of Instruction, and its Ad Hoc Committee on Programmed Learning and Related Activities. The center began with one staff member, Stanford C. Ericksen, who was appointed its director and with a joint appointment as professor in the Department of Psychology. The budget for the first years was $44,000.

B. No agency at the university had been specifically devoted to the research and development of college-level instruction, although the TV Center, the Audio-Visual Center, the Evaluation and Examination Division of the Psychological Services Center, etc. had provided aids to teaching. These units all continued to function after the center was established.

C. Numerous awards in recognition of good teaching are made at the University of Michigan. They are given at all levels, graduate and undergraduate, and within separate departments, as well as within the particular schools such as the School of Medicine and the School of Engineering. Annually a number of faculty members are honored for distinguished teaching on the basis of nominations from the university as a whole. Competence as a teacher is an essential factor in the department and college-level review of faculty members for promotion.

II. Structure and Function

A. The center was established to fulfill two general purposes, service to the faculty and research on the improvement of instruction. The service function includes workshops for small groups and the *Memo to the Faculty* series which provides information on new developments related to college teaching. Individual and department consultation on specific problems is the most direct service contribution. Continuous research has been conducted in (1) human learning and its applications, (2) the personal development of college students, and (3) the instructional uses of technology. The early interest in TV and programmed learning has changed to focus on the computer and its applications to education.

B. CRLT is attached to the Office of the Vice President for Academic Affairs. This position makes obvious its function as a unit to service the entire university complex, while using all university resources pertinent to instruction.

C. During its first nine years the center occupied a large house on the periphery of the campus which had been sumptuously remodeled by a non-university group organized to develop and market technical aids for in-

struction. Recently the center has moved to an old building, also at the edge of the campus which was expensively renovated by a group promoting the use of computers. Thus the center has twice inherited comfortable quarters from groups which had technological expertise, but inadequate programs—a practical and daily reminder to guide our own operations. CRLT now occupies half of this three-floor building, its quarters including about twenty offices for staff and graduate students working on research at the center, a library, two large rooms for seminars and workshops, and space for secretarial services. Equipment includes a keypunch and two computer terminals linked to the university's computer system. Programmers and coders are available to the faculty. The instructional uses of television are supported by a joint staff member of the TV Center and by a transfer of funds and the joint purchase of equipment for classroom experimentation. The center maintains a specialized library of books, pamphlets, and journals.

D. The center operates basically from university funds (approximately $350,000 per year). About $25,000 of this money is earmarked as the "instructional development fund," used to promote and encourage instructional experimentation by faculty members throughout the university. Other than this item and the "Current Expense" budget, the budget covers academic and non-academic salaries. The university contribution has increased at about 5 to 7 percent each year; no major increases or deletions have occurred since the center started in 1962. Research funds from outside sources are used to carry out projects of special interest to the professional members of the staff.

E. To date, it had not been necessary to establish a formal hierarchy of administrative responsibilities. Major decisions on policy issues are reviewed by the entire staff at the bi-weekly staff meetings. With about twelve part-time staff members we find that, on an average, one will leave the center each year. The center is not an academic training unit but usually from six to twelve graduate students participate as research assistants. These students come from general psychology, experimental psychology, social psychology, education, the combined program in education and psychology, etc.

F. Normally the professional staff members carry a joint appointment in an academic department and spend one-fourth to one-half of their time as teachers in these units. Promotions and advancements are, therefore, closely linked to the department status of the individual staff member. In the fall of 1970 a faculty advisory committee to the center was appointed. This five-man committee is made up of senior faculty members representing different schools within the university. Its main function is to review policy decisions, e.g. the balance between research and service and to suggest various programs that the center might consider for informing and supporting the teaching faculty. The center serves as a referral agency in directing faculty members to other units within the university.

III. Activities

A. Questions of priorities among teaching, research, and service are usually aired in our staff meetings. During the current year, for example, the center is stepping up its direct service activities in lieu of seeking new outside research funds for specific projects. Our teaching is usually within the normal curricular offerings of the home department. The only special course is an undergraduate offering in psychology, "Adult Learning in the Natural Set-

ting," which reflects the work of the center. CRLT is a participating member of a statewide computer network for instruction which promotes experimental uses of the computer and evaluation of its effectiveness as an aid to teaching. A second area of research is the training of the apprentice college teacher. A five-year U-M College Teacher Training Program, supported by the Danforth Foundation, is being conducted in the departments of Botany, Physics, Philosophy, Psychology, and History. A third research area is in student development—the motivational, social, and personality factors which influence academic achievement. Special attention has been given to the effect of residentially-based programs.

B. Perhaps our most important mode of dissemination is the *Memo to the Faculty* series, a copy of which is attached. Approximately 3,000 are distributed on campus, but 10,000 are printed for distribution to our regular mailing list in schools throughout the country and in many foreign countries. The center has carried the main financial and editorial responsibility for *Experimentation and Development in Instruction*, an annual abstract of reports from the C.I.C. (the Big Ten universities plus the University of Chicago). The seven issues to date represent an excellent operational definition of how college teachers are involved in instructional experimentation.

C. The center serves the faculty, but "we never go any place we are not invited." Requests come in as a result of our publications, or a faculty workshop or simply by word of mouth. Our Instructional Development Fund has been a rather important means for encouraging faculty to seek our services. Very few teaching units on the campus are budgeted to support instructional experimentation.

D. I think the center has had an impact on the U-M faculty. The list of instructional projects is impressive, and they have been instrumental in bringing about relatively permanent changes in a large number of departments. The faculty seems to accept the center. They attend our faculty workshops and seminars; they request extra copies of the "Memo" reports and make frequent telephone calls regarding specific instructional programs. The center has worked with nearly every department in the university. Currently, it is being considered as the prime U-M outlet for computer support in education. The budget squeeze may delay this action, but it indicates respect for the work of the center and our leadership in the technical aspects of instruction.

E. No formal evaluations have been made of the work of the center. However, we are visible and receive continuous feedback as to the kinds of things that we do that are accepted, ignored, or are rejected.

IV. Problems

A. Basically our problem is one of learning how to function as a catalytic (change) agent without becoming a crutch for any given teacher or department. We continually ask the question: how does a small unit influence a large university with respect to something as complicated and as ego-involved as classroom instruction? By way of solution we feel that our next staff appointment should be with specialists in the area of organizational psychology or group dynamics, or interpersonal relations.

EDUCATIONAL DEVELOPMENT PROGRAM

Michigan State University

Robert H. Davis, Charles F. Schuller
Stephen L. Yelon, and Lawrence T. Alexander

I. Background and Institutional Climate

A - B. Historical Development.

One important cornerstone for the MSU Instructional Development Program was laid in 1952 with the establishment of the institution's first Audiovisual Center. This center was somewhat unique in two respects. The first was that it was established on the basis of several institution-wide faculty committees' recommendations over a three-year period; thus it came into existence in response to needs indicated by the faculty rather than the administration. The second unique feature was that, unlike many such centers of that day, its functions extended beyond routine provisions of audiovisual services to an underlying goal of improving campus instruction.

The latter philosophy is particularly important in relation to later development of the Instructional Development Service. It was reflected in the fact that as the center expanded, new staff members were brought into key positions on the basis primarily of being good educators as well as specialists in one or more areas of instructional media. All had had successful teaching experience, and thus were able to relate effectively with faculty having an interest in improved instruction as well as in using media; many faculty who came in for routine service, in fact, found themselves receiving added instructional assistance at a professional level. This relationship was aided by the fact that although the center itself was administered through a Division of University Services, its principal staff members all carried faculty rank and taught in the College of Education.

Before the end of 1950's, every university academic department was making use of AVC services. There were approximately 200 who were employing films and other media in effective and fairly sophisticated ways. The latter transition to instructional system design (incorporating media where appropriate) was thus made somewhat more easily than might otherwise have been the case. A USOE grant to the center for a project in Instructional Systems Design (1962-66) was a further factor in that it involved several departments on this campus (as well as three other institutions) and provided valuable experience and insights for the center staff.

Concomitant Factors

During the late 1950's, other and more powerful forces were also at work. Many college and university presidents were warning their faculties and constituencies of the heavy enrollment increases ahead; a few, like President John A. Hannah of MSU, foresaw that the flow of dollars into higher education would not keep pace with increased enrollment demands. In a

state of the university address in 1961, with prior approval of the board of trustees, he announced that special funds would be set aside in the university budget to be allocated to those departments undertaking new and improved means (including among others, the use of technology) of carrying on their instructional programs.

At about the same time, the provost of the university named a university-wide committee representative of all colleges and instructional services to study and make recommendations concerning optimum organization and employment of learning resources in the university. The work of that committee over a year's time resulted in recommendations for (1) a central agency to coordinate all learning resources of the university and (2) a suitable structure to house the center and facilitate its services to the faculty. In addition, the committee put on a faculty conference on New Instructional Resources for Higher Education. This three-day conference, held from 4:00-9:00 p.m., attracted some 700 faculty members interested in observing and learning about new instructional materials and techniques.

The university was unsuccessful in securing external support for the proposed communications center but did receive a Ford Foundation grant of $440,000 in 1963 to establish an Educational Development Program and named Dr. John Dietrich, then chairman of the Department of Speech, to head up the new program. Significantly, EDP was set up directly in the Office of the Provost, the highest academic office of the university, rather than in a college or a lesser central administrative level. And it was that office from which emanated the Instructional Development Service which was established in 1964. One of the early acts of the new director was to combine the university's Closed Circuit Television and Audiovisual Center operations into a new Instructional Media Center and to establish a new office of Learning Service under the direction of Dr. Robert Davis.

Thus, through a variety of forces was a climate established in which instructional development as we know it could take root and grow. The leadership of the president and the administration, the work of many faculty committees and the cooperation of the university faculty organization, coupled with the presence of an active audiovisual program with exceptional relationships with large segments of the faculty, were major internal forces which enabled the university to respond positively and constructively to the increasingly severe external pressures to which higher institutions everywhere have been subjected since the late 1950's.

C. There are three institutionalized procedures for recognizing and providing visibility to good instruction at MSU. First, faculty awards for teaching. There are three such awards: a Distinguished Faculty Award is presented to staff members who have had at least five years of service at Michigan State University; a Teacher-Scholar Award, limited to instructors or assistant professors with fewer than five years of service; and an Excellence-in-Teaching Award, presented to graduate teaching assistants. Second, the Instructional Development Service publishes EDP Reports describing innovative instructional projects. The faculty member who conducts the project is recognized as the principal author. Third, descriptions of innovative instructional projects are published in the university-wide Faculty News.

II. Structure and Function

A. Purpose, Goals and Objectives

The long-range purpose of the Educational Development Program is the development and implementation of a set of educational principles and procedures at Michigan State University which will be developed and approved by the general faculty and which will preserve and improve undergraduate education.

To accomplish this purpose, six goals or objectives have been formulated: (1) To identify major problems in the areas of the curriculum, the learning-teaching process, and the utilization of faculty, financial and physical resources. (2) To stimulate and conduct research which will suggest solutions to identified problems. (3) To undertake projects and studies which give promise of improving both the quality and the efficiency of the undergraduate program. (4) To support and provide service to groups interested in experimentation with new procedures and methods in learning and teaching. (5) To facilitate implementation of faculty- and administration-approved solutions to problems. (6) To identify and communicate progress in research, experimentation, and implementation. The goals and objectives of this agency have not varied since its inception.

B. Administrative Location

The Educational Development Program and its adjunct agencies, the Instructional Development Service, are administratively attached to the Office of the Provost, the highest academic officer of the university. The EDP office does not duplicate any organization or capability already present in the university.

There are several advantages for this central location. First, it provides the best overview of academic problems. Sooner or later almost all problems pass over the desk of the provost. In this location the director of the program has regular contact with the chief academic officer.

Second, a central administrative location gives ready access to key faculty committees. Many of the problems the program is asked to help solve arise in faculty policy and curriculum committees. By serving on these committees, the director gains better understanding of the faculty point of view, and, perhaps more important, the faculty develops confidence that the director understands their point of view.

Third, not being located in any particular college provides university-wide access to instructional development services. Faculty members from all colleges feel free to use the service. And finally, the Office of the Provost provides a channel for wide dissemination of instructional development information.

The major disadvantage of the central location of EDP is that instructional innovations cannot be implemented without additional administrative consultation. Institutionalizing a new idea in a course or curriculum requires the approval and support of the department chairman and the collegiate dean.

C. Physical Plant

1. Learning Service. The Learning Service staff occupies a suite consisting of three offices and a conference room. The offices are used for discussion and consultation with individual faculty members; the conference room is used for small group meetings. The Learning Service maintains and operates an instructional laboratory called "The Experimental Classroom Facility." The laboratory consists of a classroom, a carrel room, and a control room. This facility is available for use by all faculty for instructional research or development projects.

The laboratory is equipped with complete audio and video recording equipment, including two video cameras, one video camera located in the control room; the other, located in the classroom, is remotely controllable from the control room. The control room is also equipped with a special effects generator, permitting split-screen recording, four video-tape recorders, and a video-tape editor. In addition, three complete portable video recording systems are available.

The carrel room is used by faculty members in developing and testing individualized instruction units. In the carrel room are seven instructional carrels, each fully equipped with carrousel slide projectors, audio-tape playback units, single-concept movie projectors, and TV monitors.

The offices of the Learning Service and ECF are located in the central part of the campus easily available to most of the faculty.

2. The physical plant of the instructional media center includes 20,000 square feet with CCTV having 5,400 square feet; IMC/AV, 10,500; Linton Hall, 2,400; and Central Services Building (film library, shipping and receiving, and storage), 1,850. There is a total of twenty-one offices, four studios (film, graphics, CCTV, audio), an editing room, a shop (graphics), an equipment room (projection, tape, and PA), six trucks—radio-equipped, and a maintenance and repair room.

The Instructional Media Center is housed in several buildings on South Campus with main offices in a relatively new building. The CCTV Division is housed in the College of Education building, though there is no administrative relationship to the college. Advanced graduate students and special project facilities are located in Linton Hall on North Campus.

The IMC has some 4,000 items of equipment for which it is responsible, including all types of projection, recording, CCTV, and public address equipment and production equipment and facilities for still and sound motion pictures, for audio recording,for graphics and for live and videotaped instructional television. CCTV has three locations from which programs can originate and some 140 classrooms to which programs are distributed over eleven channels and eight two-inch helical scan videotape units. Portable project, sound, public address, and other classroom media equipment and films are made available anywhere on campus. Such equipment is distributed from storage points within classroom buildings and from a central pool via radio equipped trucks.

3. The Evaluation Services are housed in offices and laboratories in a building in the central part of the campus. The Evaluation Services operate computer and auxiliary equipment for test scoring. These services are available to all faculty in the university.

D. Funding

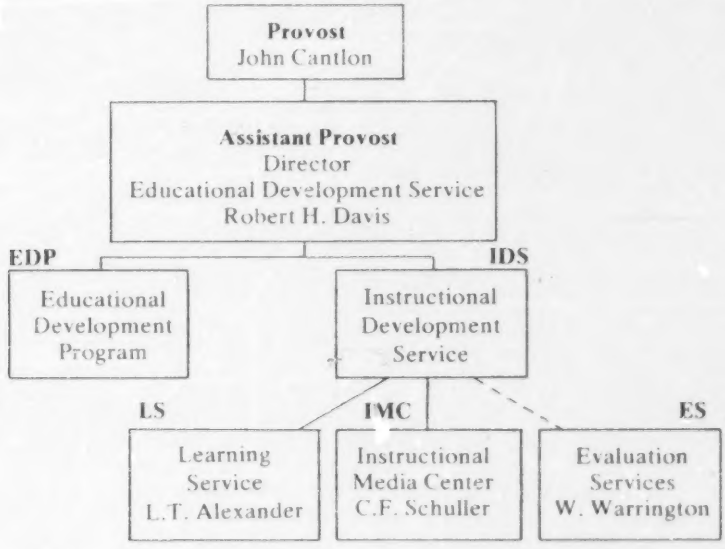
1. The Learning Service budget is part of the provost's budget. No outside funds are required, but outside grants to support research may be solicited. The budget of Learning Service is $56,500. Eighty-five percent of this is for salaries; 13 percent for supplies and services; and 2 percent for labor and equipment.

2. The Instructional Media Center Budget includes one million dollars for salaries, labor, supplies, services, equipment. Two-thirds of this is general fund and one-third is revolving. Salaries have increased gradually, labor has had some increases, but supplies, services, and equipment allocations have not increased in the last five years.

E. Internal Organization and Staff

The Educational Development Program consists of a directorate and three ancillary instructional development agencies: the Instructional Media Center, the Learning Service, and the Evaluation Services.

The organizational structure of the Educational Development Program is shown in the following chart:



This structure permits independent and cooperative functioning among the agencies. Each of the instructional development services provides a different function for the faculty. However, they all cooperate in order to assist faculty in an instructional development project. This cooperative functioning is coordinated by the Educational Development Program directorate.

The Educational Development Program directorate operates with a staff consisting of a director, an instructional development specialist, and a secretary. Beyond this small core staff, EDP depends on the three agencies to provide necessary consultative and support services for the planning and implementation of faculty-conducted projects. Two of these three agencies, Learning Service and the Instructional Media Center, are collectively entitled the Instructional Development Service (IDS). Although Evaluation Services does not report directly to IDS, it represents a significant campus-wide resource for instructional improvement.

While not a part of the EDP-IDS organization, the Office of Institutional Research supplies important assistance in the development and servicing of EDP projects. That office conducts continuing studies on the internal operations of Michigan State University and is a valuable source both of information and counsel.

The Learning Service consults with any department or faculty member on any problem relating to learning or instruction. It brings to bear current knowledge regarding variables which influence the learning process (e.g., motivational factors, individual differences in learning styles, and student attitudes and values) and assists in the design of instructional procedures that make use of all appropriate media and relevant techniques.

The Learning Service also assists in identifying critical areas where instructional or curricular innovations might produce the greatest improvement, and it aids in the development, implementation, and testing of new instructional equipment or procedures. It serves EDP projects through consultation with faculty members who are interested in defining course objectives, specifying required behaviors, exploring new teaching techniques, or relating test results to teaching practices.

Learning Service consists of two professional staff members, one technical assistant, and two secretaries. Both professionals have been trained as psychologists, one primarily experimental, the other as an educational psychologist. The technical assistant, who is the director of the Experimental Classroom Facility, is a graduate student in educational psychology.

There has been essentially no turnover in professional staff. The average turnover for the technical assistant is about one year and six months. The average turnover in secretarial help is about one year.

Additional graduate student help is hired as required for research and development projects. In-service training on experimental design and research skills is given only as needed.

Undergraduate students are only hired as experimental subjects.

The Instructional Media Center is responsible for the coordination and development of instructional applications of audiovisual media, including closed circuit television and the improvement, through research and development, of programs and materials designed for instructional purposes. It serves EDP projects through consultation on and production of instructional media and materials as well as design of learning environments. The Instructional Media Center includes twelve professional and sixty-five non-professional personnel.

Evaluation Services serve teaching departments in the evaluation of student and faculty performance and the improvement of course

examinations. It serves EDP projects through consultation on evaluation design and analysis of evaluation data.

F. Relations with Other Academic Units

Because the Learning Service and the Instructional Media Center are located for administrative purposes in the Office of the Provost, they are administratively independent of any college or academic department. However, the individual professional staff members have joint appointments with the departments of Psychology and Educational Psychology, Curriculum and Secondary Education, and Administrtion and Higher Education and teach courses in those departments.

A substantial graduate professional program in Instructional Development and Technology is conducted through the College of Education by the IMC staff.

The Learning Service staff members consult with academic departments on curriculum development and graduate student training. They also conduct research on questions dealing with administrative policy decisions.

III. Activities

A. Time

The Educational Development Program functions on a project base in much the same manner as other funding agencies. An operating budget from the university general budget is allocated to support projects submitted by faculty members. Projects may involve curricular change, course revision, modification of instructional procedures, or review of college department operating procedures.

Normally a faculty member works with consultants from the Learning Service, Evaluation Services, and Instructional Media Center in the development of a proposal. After approval by the appropriate department chairman and college dean, the proposal is submitted to the EDP office for evaluation and review. If questions arise, suitable faculty experts discuss the proposal with the submitting individual or group.

As shown in the following table, each of the Instructional Development Services devotes different proportions of time to administrative, teaching, R & D, and service activities.

Percentage of Time Devoted to Different Activities

	Learning Service	IMC	Evaluation Services	Directorate
Administrative	5	15	5	95
Teaching	20	25	50	—
R & D	25	10	25	—
Service	50	50	20	5

Activity priorities are determined by the separate missions of the different agencies, and each has considerable freedom to establish these priorities. For example, the Learning Service develops and presents courses, seminars, and workshops when the need is recognized. Generally, the major limitation on further extension of activity in any one area is usually due to limited funds which restricts the hiring of new personnel.

1. Courses Offered

The Learning Service staff offers courses in instructional design and technology, seminars in simulation and instructional games, and workshops in the systems approach to instruction. Students in these classes include primarily some university and school administrators and university faculty. Some graduate and undergraduate students from all academic fields also attend.

These courses result in the application of instructional design and systems approach by our students to their own teaching. In addition, various guides, manuals, and instructional materials are developed and are of general use.

The Instructional Media Center staff offer courses and seminars in the Curriculum and Secondary Education and Television and Radio Departments dealing with audiovisual media, the design of graphics for instructional development, photography, cinematography, the administration of instructuional development and technology programs, programed instruction, instructional television, simulation and lab experience—and they also run institutes in Instructional Development and Technology for university faculty and public school personnel. The target population is primarily graduates in the Collge of Education though participants come from a wide variety of academic fields.

The Evaluation Services offer courses in educational tests and measurements to graduates and undergraduates in the College of Education.

2. R &D Project Areas

R & D projects through the Instructional Media Center derive from three principal sources: (a) doctoral dissertations from candidates in the Instructional Development and Technology Professional Program (some fifty full-time Ph.D. candidates are currently on campus); (b) from outside funded projects, both domestic and international; and (c) from internal operational studies and evaluations of the media components of Instructional Development projects.

Under (a) the range is extensive with some thirty-nine candidates having completed their Ph.D.'s to this point in the program. Representative outside funded programs include: a five-year project involving four institutions in Instructional Systems Development: a Demonstration and Evaluation Project; a Procedural and Cost Analysis Study of Media in Instructional Systems Development; a four-year Single Concept Film Clip Project; two Institutes for Elementary and Secondary Coordinators of Media Programs, summers of 1965-66; a Higher Education Institute for Advanced Study in Educational Media Applications for Culturally Deprived Programs, a July-September, 1967; a Follow-up Conference in the 1967 Institute, 1968; two academic year (1967-69) Institutes in Faculty Development under Title VI-B of the H.E. Act for Faculty from MSU and surrounding institutions.

The IMC is currently headquarters for a national project designed to train teams of educators in Instructional Development principles and procedures in school systems across the United States. The project is aimed particularly at school systems having large, disadvantaged populations, limited resources, and a real desire to find solutions to their instructional problems.

Internal operation studies have resulted in a new pattern of organization and administration of the center; a change in emphasis in the center film library; a revised professional program in instructional development and technology; and the establishment of an R & D section within the IMC organization.

For the Learning Service, research and development projects arise in response to questions raised by the administration and instructional problems of the faculty. An attempt is made to utilize faculty instructional development projects to test innovative instructional procedures. The courses taught by *Learning* Service staff personnel also reflect manifest needs and requests of the faculty. Service activities are conducted on request of the faculty and other agencies in the surrounding community.

The R & D project areas for the Learning Service are: (a) an empirical investigation of the effect of instructional objectives on the learning effectiveness of college students; (b) a study of the effectiveness of TV lectures and the attitudes of students toward this method of instruction; (c) the development of a training program for graduate teaching assistants; (d) an investigation of communication links among administration, faculty, and students at the university; (e) the development of new methods by which instructors may obtain feedback from students regarding their teaching (Student Instructor Form); (f) the development of individualized instruction through multi-media learning units.

The R & D work at Learning Service has resulted in books, papers presented, journal articles, and programs such as the Graduate Teaching Assistant Training Program.

3. Service Projects. Representative services of the Instructional Media Center include: (a) media equipment, operator, and CCTV services to all regular classroom instruction without charge; (b) the maintenance and repair of all related equipment on campus; (c) consultation with faculty on instructional needs, particularly when these relate to instructional technology; (d) production of all types of photographic, film, television graphics and related instructional materials; (e) consultation on building new or modifying old classroom facilities to accommodate instructional technology; (f) teaching of courses, advisement of graduate students, and related responsibilities for the program in Instructional Development and Technology; (g) conducting demonstrations, institute workshops, seminars, etc. in instructional development technology for interested groups of faculty and organizations here and around the country.

The service activities of the Learning Service are: (a) consulting with individual faculty members on instructional procedures; (b) assisting faculty members to conduct projects in the Experimental Classroom Facility; (c) publishing and distributing to faculty papers discussing new approaches to instruction; (d) assisting faculty to develop and test more effective instructional procedures; (e) presenting lectures, seminars and workshops at

schools, colleges, hospitals, and other social agencies in the surrounding community.

The service provided by Learning Service has resulted in over 100 instructional improvement projects in over thirty-five academic departments.

B. Origination and Output of Project

The activities of all the component agencies in the Instructional Development Service originate in a combination of the interests of the individual staff members and the instructional needs of the university faculty community.

Two types of information are disseminated throughout the university and to interested faculty members in other universities. The first is a publication called "*EDP Reports*" which describes projects conducted by faculty at MSU. The second is a publication called "*EDP Comments*" which contains discussions on new approaches to instruction.

The information thus disseminated has generated a recognition of the need for instructional development on campus and increasing acceptance of the services provided by the Educational Development Program.

Most important sources for new information are: professional meetings, professional journals, informal association with colleagues at other universities and within this university, and from student questions. New ideas are generated and stimulated mainly by instructional problems experienced by faculty members. New ideas are acted upon by instituting research programs and new courses.

C. Users

EDP services are used mainly by faculty. There are three ways that faculty go about initiating contact with the Instructional Development Services. First, they are referred from the Educational Development Program directorate when they have applied for an EDP grant. Second, many faculty are referred by other faculty members. Third, many faculty members seek individual consultation on their own, usually because they have participated in our seminars or workshops or have read about Learning Service in the EDP Reports and EDP Comments.

In the Educational Development Program, four general criteria have been established against which all proposals are evaluated. These are, first, the number of students affected. In general, the Educational Development Program is concerned with those courses and departments which serve the largest number of students. Second, the project must evidence an experimental or innovative approach to curriculum or instruction. EDP does not seek to promulgate traditional procedures, but instead seeks new and improved methods of solving instructional problems. Third, the project must seem potentially applicable to other academic areas in the university. Projects which are so specific and narrow as to have little generalizability to other units of the university are generally refused. Fourth, the project must possess the capability for evaluation. Procedures for evaluation are built into all projects and faculty are required to submit final reports describing project outcomes.

After approval, projects are typically supported by EDP through their experimental phase or until sufficient data have been collected for objective assessment. All funds are transferred directly to the department or college

concerned. Upon project completion and a favorable evaluation, EDP recommends that the project be integrated into the ongoing curriculum.

Faculty consult the Learning Service for two kinds of reasons; one motivational and the other reinforcing. These are listed below:

Motivational

1. They recognize deficiencies in their instruction. **2.** They seek recognition as instructional innovators within their own academic area. **3.** They want to influence their colleagues to adopt their instructional procedures. **4.** They want to be relieved of student pressure. **5.** They are disturbed by student criticism.

Reinforcing

1. They receive full credit for the instructional developments they produce and gain financially if it is marketable. **2.** Time and money provided by EDP acts as an incentive.

D. Results

At least four criteria may be used for judging the program itself. One criterion is the frequency and degree of participation which it has had in the major educational movements within the University. It can be demonstrated that EDP has provided service and support in connection with most of the recent changes occurring within the institution. A second criterion is the extent to which innovative ideas have moved from department to department. Again, numerous instances can be cited to show that measures which have produced successful developments in one department have been copied, where appropriate, by other departments. A third criterion is the positive result accruing from intensive evaluation of individual projects supported by EDP. These evaluations of both learning and student attitudes clearly indicate success in a number of areas. What might be called the "multiplier effect" is the fourth criterion. In the three years of formal operation, the number of project requests have quintupled and they give evidence of increasing at an even greater rate. Measured against these kinds of criteria, the Educational Development Program can be considered a success.

While the successes of the Educational Development Program appear to be significant, it is also important to recognize that the program has had its failures. There are, for instance, significant *failures by omission*. Some departments in the University have not sought the help or support of the program. Subjective judgment of this failure leads to the conclusion that the willingness to consider innovation is related to the sensed need to solve problems. Many faculty members apparently are not interested in considering new or improved methods if traditional patterns seem to work. If the number of faculty and staff is adequate, if the technical resources are sufficient, if the class section size is reasonably small, and if the vocational and professional accrediting obligations are met, there is little motivation to scrutinize present practices with an eye to improvement.

About 6-8 percent of the seventy-five EDP projects have been *failures of commission*. Several of these failures occurred in the initial stages of the program and probably resulted from a lack of efficient and organized screening, and evaluation of proposed projects. Others represented poor judgment on the part of the project developers and the EDP directorate, and still others failed because of inadequate faculty commitment.

IV. Problems and Needs

A. Problems

1. Learning Service

a. Maintenance of faculty commitment. In many cases a faculty member begins an instructional development project without full appreciation of the amount of work it involves. When this becomes evident he becomes discouraged, and the pressure of other obligations results in a reduction of commitment or abandonment of the project.

A partial solution to this problem is to partition the development project into small task units, each with an easily identifiable product. Consultation with a faculty member, then, involves guiding him through the successive tasks and teaching him the skills necessary to accomplish them. Thus a faculty member learns how to write objectives, perform a task analysis, or design an evaluation plan, etc. Each task should be small enough so that it does not overload him and should result in a product which he perceives as a step toward the final goal.

b. Monitoring. Insufficient staff to monitor and provide needed assistance at all stages of project development.

c. Visibility. Too few faculty know about the Educational Development Program and the consultative services available. Visibility is gradually increasing because of formal presentations describing the program and EDP publications.

d. When EDP funds are discontinued, some projects are dropped due to lack of departmental support.

e. Most of the faculty who seek consultative assistance are relatively competent instructors. A major problem is to induce the less competent instructors to seek assistance.

2. Instructional Media Center.

a. Insufficient coordination of instructional development effort.

b. Insufficient funds for hardware and software.

c. Insufficient staff.

B. Needs

The major need at present is more staff trained to consult on instructional development at the college level. This need can only be alleviated by instituting training programs in instructional psychology.

A second need is a liason or information exchange mechanism with other academic departments so that important instructional problems can be identified and resources marshalled to solve them.

A third need is increased support by the administration so that instructional development resources can be expanded.

OFFICE OF MEDICAL EDUCATION RESEARCH AND DEVELOPMENT

Michigan State University

Hilliard Jason

This office (OMERAD) is now completing its fifth year of operation. It represents, in my view, an important new trend in professional education. Its primary mission is to bring to the medical school a professional critical examination of its educational program, leading to whatever activities might improve the program. Our office was the ninth of this type created in this country. It was the first to be established in a new medical school. There are now twenty-two schools with such units, and many others would like to create one, but are unable to find suitably qualified people. One responsibility we are now assuming is to prepare people who become heads of such offices.

A personal note which indicates how dramatically the world of medical education has changed in the past decade takes me back a mere fourteen years, which in the history of medicine is a flick of an eyelash. When I had the temerity to suggest that I was convinced there was a better way to teach medicine and I was thinking of taking time off from being a medical student to get an education degree in order to prepare myself for working at this in a serious way, I was told by many nationally prominent medical educators that, while my proposal was intriguing, they were convinced I was out of my mind. They argued that within my lifetime there would not be a medical school in this country sufficiently concerned with its educational program to want to hire me for the skills I would have developed.

It is now just fourteen years later and not only do I have a job, but there are twenty-one other offices, each with an average staff in the range of four to eight full-time people, and there are twenty other medical schools actively searching for people to head up such offices. Consequently, the atmosphere in which we are working at the moment is very positive. It is a good time to be studying, and hopefully modifying, the educational process in medicine. People are beginning to recongize that running an educational institution involves more than being expert in the disciplines of that field.

I will briefly review the general structure of our operation and the kinds of things which we have been doing as well as some of the things which I hope we will be doing in the next few years. We have five major objectives:

1. To provide assistance to this college's faculty in designing innovative instructional programs. We are committed to the idea that this medical school will be distinguished by its innovative contributions to the educational process in medicine. Our office should be the focal point for stimulating and provoking innovations.

2. To design and implement a longitudinal study of student change throughout our program, as a basis for continuous program evaluation. Our intent is to monitor the overall program to identify inadequacies, deficiencies, and misdirections, as well as features which should be retained and expanded.

3. To undertake both applied and basic studies of the process of medical education. We are examining aspects of the educational process from both the practical point of view of immediate improvements in the program, as well as from the point of view of improving our understanding of the educational process—an understanding which may eventually lead to a better education.

4. To provide consultative assistance and other services to individuals, departments, and committees in the conduct of their educationally relevant tasks.

5. To develop degree and non-degree programs of instruction in aspects of medical education for various individuals at various levels.

Our goals embrace the three characteristic responsibilities of an academic department—instruction, research, and service—and in every way, except in name, we function as an academic department. The reason that we were not initially called a department was that there is a circular administrative bind in this university: one needs to be a degree-granting operation to be a department, but one cannot become a department until one has a degree-granting program. We are now developing a degree-granting program and will probably be called a department within the fairly near future.

I would like to turn to each of these three primary areas of activity. Our instruction involves a number of different groups. At present, our primary contact with medical students is to teach them some of the content in the typical medical school courses. Members of our staff contribute to the teaching of behavioral sciences, medical problem-solving, and aspects of the doctor-patient relationship.

We are now developing some special programs for medical students, dealing with the teaching-learning process in medicine. Our expectation is that a considerable number of this school's students will become academicians, either part-time or full time. To help prepare them for these responsibilities we are employing several as research assistants, have some on summer fellowships, and will have others in six to twelve-week electives.

We have other students on other bases. We have graduate students from education and psychology as graduate assistants or interns, and we offer post-doctoral fellowships. We currently have four physicians, one nurse, and a biochemist with us, in one to three-year programs in medical education.

We also have shorter-term students. We have had, for example, two senior people from the World Health Organization who spent two months with us. We developed a special program to help prepare them for their new assignments as head of two new international centers for medical education that will serve English-speaking and French-speaking central Africa.

A major part of our responsibility, however, is to the medical faculty themselves. They are our main students. We provide both formal and informal instructional activities for them. Each fall, we provide an intensive workshop of three to four days duration on some aspect of medical teaching. In addition, we have developed special seminars and retreats and will have more formal instruction in the near future.

We also provide many informal instructional activities through the work which we do with the faculty on committees; and through informal con-

sultations in which many faculty members turn to us for advice. We also instruct people from off-campus on short-term or longer-term bases. For example, we have developed instructional workshops with the organization of directors of medical education of the community hospitals of Michigan and for family physicians who serve as preceptors for medical students.

We think of our research as both basic and applied. They overlap, and the division is somewhat unrealistic, but it helps to conceptualize the difference in some of our activities. We view our applied research as those things intended primarily to provide immediate payoff, directly applicable to the planning process in the medical school as well as to decisions being made from day-to-day.

Our longitudinal study is the first major applied research which we undertook. It involves an intensive study of our medical students, beginning from the first day they arrive on campus, before any classes begin. We interview them at that time and administer a number of tests. The nature of their activities, the way they spend their time, and various aspects of their professional development are investigated systematically throughout their time with us and are followed after they leave us.

We have also worked actively with the faculty in developing new approaches to evaluating student performance in their various courses, as well as in evaluating the courses themselves.

Another of our more important studies is based upon our belief that people learn best when they learn in a setting most like the one in which they will be applying their learning. If one is learning to practice medicine, the best place to learn is where medicine is practiced. We, therefore, have argued that a university campus is not the appropriate place for much of the learning which needs to be done in medicine, because it is significantly different from those places where most of our graduates will practice medicine. If medical students are to practice medicine in the community, in rural settings, in large metropolitan settings, in community hospitals, in private offices, in clinics, and in health care centers, then much of the learning should take place in these settings. This is difficult, however, because the full time faculty in the medical school cannot provide the supervision necessary in those settings. First, it wastes too much of their energies to be constantly travelling back and forth between the many settings in which this instruction should take place and the medical school campus. Second, they do not have the content knowledge necessary, because they are not themselves familiar with this kind of practice. This means that we have to depend on people who are themselves in practice. We know from past experiences at other medical schools that the use of such instructors does not usually work out. The reason is that no effort is characteristically made to help practitioners understand what really are the goals of the medical program, and what are the skills necessary to carry out these activities.

The thrust of this project is the development of techniques for instructing practitioners to be effective instructors. To accommodate their schedules and geographic distribution a large part of our effort is directed toward developing self-instructional materials on teaching. We propose to use simulation techniques, gaming techniques, and other self-instructional approaches to provide practitioners of medicine with an opportunity to acquire

the skills of effective instruction.

Our basic research includes a number of things. The longitudinal study also has many basic research aspects to it, in which some fundamental theoretical notions are being examined. Another involves a systematic and detailed analysis of the inquiry process in medicine. This study is examining the intellectual skills and cognitive processes involved in sensing and recognizing the existence of problems, in gathering the necessary information to solve problems, and in making decisions concerning these problems. To do this, we observe expert physicians in the act of solving medical diagnostic problems. Our primary strategy is to videotape them while interviewing and examining a series of simulated patients. They then review their own videotapes and recount the steps in their thought processes while formulating the diagnosis. Our long-range goal is to find improved ways to instruct medical students in the acquisition of these skills.

Finally, there are many service activities which are among the important commitments of this office. We have a member of our staff as a resource person on each of the educationally-related committees within the college. They serve as consultants and provide much of the background and leg work needed to help the committees function more effectively. An important part of our service is to consult with faculty members and departments. A further activity is the development of instructional materials of all types.

An important part of our service activities has been the facilitation of collaboration between the medical school and other aspects of the university that have educational missions. We have developed a close working relationship with the College of Education, the Instructional Media Center, the Closed Circuit TV operation, the Department of Communications, and the Continuing Education Service, as well as with a variety of individuals. This is an important commitment—namely, to create a medical school that is genuinely integrated within its parent university. I think being devoted as we are to the highest possible quality educational program makes it incumbent upon us to be informed about and to "exploit" the rich resources of this campus in the educational field.

We have also been involved in making policy decisions which relate to educational activity, to student policy, and to educational and curriculum planning. Finally, a research and development ingredient appropriate for an office like ours is to keep in touch with new developments on the national and international scene that might have relevance to forecasting what is coming in the world of medical practice or the world of education that might pertain to our educational planning. This looking at the future and being concerned about what the future will bring is something that we take seriously and hope gets filtered back into the planning and the decision-making process.

To be all of these many things takes time and resources. As of next year we will have ten full-time equivalent faculty. We're not sure it will be enough.

PROGRAMMED LEARNING CENTER AND HUMAN LEARNING CENTER

University of Minnesota

Russell W. Burris

I. Background and Institutional Climate

A. 1. The Programmed Learning Center was established on the recommendation of the steering committee of a faculty conference, "Higher Education Tomorrow, Challenges and Opportunities for the University of Minnesota."

A. 1. November 1962.

A. 3. Director (.6 FTE), Research assistant (.5 FTE), and Secretary (1 FTE).

A. 4. $45,000 three years.

The major support for the Programmed Learning Center was a grant from the Hill Family Foundation for the period 1962-1968. In 1965 the Board of Regents established the center as a permanent part of the university structure. The Center for Research in Human Learning was established in 1964, and the Programmed Learning Center is a service unit (for faculty and departments throughout the university) among the three instructional units, psychology, child development, and educational psychology, which make up the four components of the Human Learning Center. In the Human Learning Center there are twenty-three faculty, six post-doctoral fellows, twenty-eight pre-doctoral, and twenty-two staff members.

B. 1. Major reorganization of various units having to do with instructional development and educational resources is underway.

B. 2. None.

C. It varies from college to college. The university gives five instructional improvement awards ($1,000 each) each year. Nearly every collegiate unit gives an outstanding teacher award each year. Some colleges have curriculum revision projects underway with accompanying efforts in instructional redesign and improvement. A small grants program exists in the Curriculum Studies Center, and last year the Board of Regents approved a University Senate recommendation that 3 percent of the total instructional budget be committed to a Program of Educational Development.

II. Structure and Function

A. 1. The mission of the Programmed Learning Center is to carry out research and development activities in the design of teaching-learning environments within educational programs throughout the university. Since its establishment the center has worked to build a support program valuable to faculty and departments in their efforts to provide effective instruction. Guiding much of the center's activities has been an expectation that many of the new and developing educational techniques and technologies hold great potential for the development of more effective and efficient designs of teaching-learning situations. Accompanying this expectation, however, has

been a recognition of the fact that appropriate use of these techniques and technologies requires careful study of the processes involved in effective teaching and learning.

A. 2. A recognition of the similarity of objectives but differences in method for support among the university agencies supporting instructional development has led to an effort to develop a long-range plan for such coordination. Development of the plan is underway.

A. 3. If universities and colleges are to provide resources for effective support of learning and teaching, there must be a higher degree of coordination than exists at present. The need for coordination is certainly clear if such resources include agencies for instructional design and evaluation. At least six areas of services and resources are seen as making up this needed coordination, namely, (1) instructional development and design, (2) research and evaluation, (3) library and information resources, (4) television services, (5) audio-visual and technical services, and (6) computer services.

B. 1. Although funding for the Programmed Learning Center is provided in a special budget item from the vice president for academic administration, the center is located administratively in the Human Learning Center which in turn is within the Department of Psychology.

B. 2. This location is advantageous for the research talent and support which is required for many instructional development projects, but such location does not make the university's commitment to instructional development and service as obvious as a more central location might.

C. 1. The current facilities include three offices, two rooms for computer terminals, and a library, and as a unit of the Human Learning Center has extensive list of facilities and equipment is available. These include laboratories, experimental classrooms, shops, and a varied pool of research equipment.

C. 2. All facilities and equipment are under control of the Programmed Learning Center Human Learning Center.

C. 3. All facilities are located within the Human Learning Center or in the psychology-education complex on campus which is centrally located on the Minneapolis campus.

C. 4. The center has an extensive and varied pool of research equipment that can be readily employed in the permanent laboratories or sent to a temporary location in the center's mobile laboratory. This pool includes such standard laboratory items as slide projectors, tape recorders, tape readers, noise generators, voice relays, amplifiers, stereo headphones, oscilloscopes, solid state switching equipment, electromechanical switching equipment, timers, printing counters, etc.

Equipment added during the year to continue building a solid base of research components included: Sony Video tape recorder, camera, and monitor; eight-channel event recorder, sound slide projector; high speed paper tape reader; oscilloscope; two-track stereo recorder; digital printer; optical scanner; and tachistoscope.

Six terminals to the Honeywell Edinet System were leased with funds made available by special grants from the university and the Honeywell Information Service Division. The speech synthesizer added last year is of great importance for speech perception experiments.

C. 5. All.

D. 1. Funding for the Programmed Learning Center personnel and office supplies is a line item in the university's budget. Many projects are funded by internal appropriations for particular programs. Outside funds are obtained for some projects.

D. 2. For projects involving large costs, yes.

D. 3-4. No.

D. 5. $88,000

D. 6. Instructional development, CAI personnel, CAI equipment, and supplies.

D. 7. Instructional development 37 percent; CAI personnel 17 percent; CAI equipment 43 percent; and supplies 3 percent.

D. 8. All growth has occurred in service categories, i.e., costs directly involved in providing support for instructional development projects.

E. In the Programmed Learning Center all personnel are graduate or undergraduate students except for the director and the secretary. The graduate students are Ph.D. candidates in psychology, education, or in a disciplinary area in the project to which they are assigned. Computer personnel are for the most part students in computer science. Considerable in-service training occurs with computer personnel, and for instructional design most professional training takes place in courses and special research problems.

F. The Programmed Learning Center as a service agency is available to faculty and departments for consultation. Most instructional development groups within colleges and departments consult with the center. The administration often refers groups or individuals to the center. No formal relationships exist with similar agencies, and no staff members have joint appointments.

III. Activities

A. Proportion of staff time: (1) administration, 10 percent; (2) teaching, 25 percent; (3) R & D, 25 percent; (4) service, 40 percent.

B. Compromise between demand and mission.

C. 1. Graduate courses in instructional design, instructional uses of computers, and seminars for faculty.

C. 2. Graduate students in psychology, education, and a few from various disciplines.

C. 3. (a) German language, (b) English composition, (c) English literature, (d) art history, (e) music theory, (f) geology, (g) physics, (h) university civil service educational development, (i) hematology, (j) opthamology, and (k) biochemistry.

C. 4. Service activities: (a) faculty seminars (approximate 80 a year), (b) discipline-oriented seminars (once project is initiated), and (c) consultant to instructional development and planning groups and committees throughout university and community including statewide efforst (university assigned).

D. Most activities are initiated through faculty seminars although some are off-the-street business. Most faculty carry out some pilot project in the seminar and some of these develop into larger projects. These activities usually result in new instructional materials and designs and procedures for continued systematic development. Information is disseminated to members of faculty in the discipline relevant to project and other educators. Faculty

and departments learn about the center through seminars.

E. As noted, service is available to faculty and incentive is primarily service rendered—i.e., no grants are available from the center.

F. Significant and major instructional revisions have occurred in German language, English composition, art history, biochemistry, counseling psychology, and others. New materials have been added in journalism, engineering graphics, hematology, opthamology, and others. The shortest lasting and least effective results seem to be related to those efforts of faculty who have underestimated the difficulties involved or who come from departments without a strong commitment to instructional development.

G. In the main, the faculty members are members from the discipline. In the past few years I have learned, however, that a larger group of faculty from the discipline must be involved in evaluation.

IV. Problems

A. 1. Funding for initiating developmental projects. During the initial phase of working on a particular project with faculty or a department, obtaining sufficient funding to adequately begin to work on the broad complexities of the effort is of prime concern. If the university's 3 percent Educational Development Fund works as expected, this problem may diminish in its severity.

A. 2. To get faculty and departments sensitive to the more critical issues of instructional development, i.e., beyond the more superficial issues of format, curriculum rearrangement, media, etc. These issues, as I see them, have to do with performance criteria (competency theory) and instructional strategy-sequence (pedagogical theory and knowledge theory). The general faculty seminar series and the discipline-oriented seminar series have been fairly successful in accomplishing this.

B. 1. The major need at this time is sufficient and competent staff to adequately serve faculty and departmental requests. The fundamental issue has to do with building a support operation which can efficiently and effectively respond when faculty and departments begin to "itch."

B. 2. The second need, which is related to the first, has to do with coordinating the various instructional support agencies in ways to serve faculty efficiently and effectively. Too often faculty and departments see instructional development as a problem of introducing media, having recitation sections, etc. There is no clearly identified point-of-entry to work on instructional development, i.e., the problem may be seen as a CCTV problem, audio-visual problem, etc. rather than program development.

CENTER FOR THE TEACHING PROFESSIONS

Northwestern University

B. Claude Mathis, Director

To view education in the mid-years of the twentieth century is to become aware of shaping influences responsible for leading education away from a concern with the one activity which gives education meaning—teaching. Hopefully, the decade of the seventies will witness a renascence of creative and meaningful teaching from kindergarten through college. Nowwhere is a re-evaluation of the teaching function more desperately needed than in the field of higher education. While our colleges and universities publicly proclaim their commitment to teaching, their reward systems clearly proclaim research and related activities as the primary concern of those who wish to advance in their profession.

Most critics of the academic scene call for reform within colleges and universities as the necessary condition for a return to the traditions of teaching and learning which should ideally govern the life of a university. Often overlooked is the fact that the life of any educational institution is defined by the values of the individuals who collectively represent that institution. For educational institutions this means predominately the teachers and students. Much evidence today indicates that students are well aware of the lack of good teaching in the schools and colleges which they attend. This is particularly true at the university level where students have learned to be perceptive critics of their mentors. Educational reform will be difficult and painful until, and unless, the professions themselves accept the responsibilities which they have toward meaningful teaching to the same degree that the professions now emphasize their responsibilities for scholarship and research. The ongoing renewal of any profession, from one generation of participants to another, is as much a function of the manner in which members of the profession teach each other as it is a result of the creative scholarship which the profession has contributed. In universities particularly, the academic professions have consistently displayed a value system which gives higher priorities to research and scholarship than to innovative and creative teaching.

I. Background and Institutional Climate

A. The Center for the Teaching Professions at Northwestern University was established on September 1, 1969, through a grant of 2.48 million dollars from the W.K. Kellogg Foundation. Of this 2.48 million dollars, 1.5 million has been committed to a portion of a new building for the School of Education. This portion of the building will house the Center for the Teaching Professions beginning in September 1972. The remaining $998,000 represents an operating budget which is committed for the six-year period of the Kellogg grant. During the first year of operation, the center staff consisted of the director, a secretary-receptionist, and selected graduate students and

auxiliary personnel totaling approximately two full-time equivalent positions. During the present year, the full-time positions have been increased to include two program directors and an administrative assistant. Future plans call for the addition of auxiliary staff on a part-time basis so that a full staffing commitment will be reached during the academic year 1971-72. The Center for the Teaching Professions is under the administrative direction of the School of Education. Its programs, however, are focused on the problem of teaching within Northwestern University and in other educational contexts to provide both pre-service and in-service support for the development of more effective strategies for creative teaching and curriculum reform in all professions.

B. No institutional instructional improvement agencies existed at Northwestern University prior to the creation of the center, other than a committee of the Academic Senate on Curriculum and Teaching and various departmental committees and activities administering to the specific needs of the departments involved. No other functions or agencies were transferred to, or incorporated in, the Center for the Teaching Professions at the time of its creation.

C. Statements of guidance issued by the deans of the various schools and colleges at Northwestern University contain directions for the consideration of good teaching as a factor in determining promotions. Other than this, Northwestern University does not have an established institutionalized structure for providing visibility to good instruction, other than through ad hoc mechanisms which have been established in some departments.

II. Structure and Function

A. The specific objectives of the Center for the Teaching Professions which were proposed to the Kellogg Foundation are: (1) to improve the teaching of prospective teachers and present members of the faculty in a variety of fields at Northwestern University; (2) to service other educational institutions and professional organizations to improve their teaching programs; and (3) to serve as a model for similar centers at other universities throughout the world. The center will concentrate its efforts during the first three years of activity on the improvement of instruction within Northwestern University. To accomplish this objective, the center will become a university-wide resource to provide support and expertise to faculties in various schools and departments seeking to improve teaching and curricula. During the last three years of the Kellogg grant, the center will expand its efforts to include the public school sector as well as other colleges and universities. Plans for the future call for the center to become a self-sustaining operation within Northwestern University. Funding beyond the six-year commitment of the Kellogg Foundation will derive from university support, coupled with funding which is obtained from granting sources outside the university, as well as service charges for activities purchased by other institutions. Our center has not been in operation long enough for a basic evaluation of the objectives which were submitted to the Kellogg Foundation as a basis for funding. The center has an advisory committee made up of representatives from the several schools and colleges of the university who will assist the director next year in the beginning of this evaluation process.

B. The Center for the Teaching Professions is administratively and budgetarily under the direction of the dean of the School of Education. The director is an associate dean of the School of Education and reports directly to the dean, who, in return, is responsible to the vice president and dean of faculties. The budget of the center is under the control of the director, subject to periodic reviews with the dean of the School of Education. The Center for the Teaching Professions departs from a pattern at Northwestern University in this regard, since other centers at the university report directly to the vice president and dean of faculties. The administrative arrangements for the center were established basically for the purpose of committing the resources of the School of Education to the improvement of teaching and curriculum within the university. Both the university administration and faculty within the School of Education conceive of the School of Education as a university-wide resource which can be utilized effectively to help solve some of the problems of teaching and curriculum innovation within the total university. While the administrative arrangements for the center reflect a close relationship with the School of Education, the functional activity of the center is that of a university-wide resource with the needs of the School of Education having no greater priority than the needs of other segments of the university community.

C. At the present time the center is located in a private residence at 2000 Sheridan Road adjacent to the campus. This residence contains offices for the director, the secretary-receptionist, the two program directors, and a shared office facility for graduate students and auxiliary faculty serving approximately three people. A large media laboratory is on the second floor which contains instructional equipment for use by faculty within the university. This equipment includes a video taping system, film projectors, overhead projectors, slide projectors, and facilities for making slides and overhead visuals. While the center is not an instructional resources facility, we maintain some equipment which is made available for instructional improvement projects. These facilities are under the direct control of the center and for the exclusive use of its programs. The house is located midway between the northern and southern extremities of the campus and is an excellent location for total campus use. The facilitieis available for the center in the new School of Education building consist of the whole of the first floor of the building. This includes offices and conference rooms for staff, together with a large multi-media learning facility which will become an instructional resources unit for the university. This building is being constructed immediately across Sheridan Road from the present facility. Its location in the center of the campus will place the center within a short walking distance from any point on campus. The equipment and literature collections which the center is now assembling will go into the multi-media learning facility in the new building. This facility will become a limited instructional resources unit for the university. A proposal has been made to the administration for the construction and funding of an instructional resources unit within the university similar to those found in many larger public universities. The center will remain as a parallel unit to this facility. The center conceives of its function as that of providing educational activities which would lead to the improvement of teaching. While these activities contain some commitment to

service programs within the university, the mission of the center is not that of a service agency in the sense of a traditional instructional resources facility.

D. The basic funding for the center is through the Kellogg grant as described above. The center is required to seek outside funds for the continuation of its efforts beyond the six-year grant period of the Kellogg fund. Discretionary funds are available and are disbursed by the director of the center. The present budget of the center is $121,000 for the funding year 1970-71. Major budget categories follow the guidelines of the university which include listings for staff salaries, released time of faculty, visiting associates, student support, commitments of budget are the use of funds to support instructional improvement projects, which would include support for people and the preparation of materials. In addition, a major portion of the budget goes to the support of the staff for the center. The distribution of funds has been established to a great extent by the directions received from the Kellogg Foundation relative to the administration of the grant. This distribution will remain relatively fixed during the six-year commitment from the foundation. Funds which are received into the center from other funding agencies, however, do not need to conform to the guidelines established by the Kellogg grant.

E. The internal organization of the center represents much more of a functional relationship between staff than direct line and staff commitments. The director of the center is responsible for the development and the implementation of programs. He works with the program directors of the center and other faculty within Northwestern University in any way which is relevant to the accomplishment of the tasks to be performed. Staffing meetings are held periodically and suggestions for program support can be initiated by any staff level. The director and program directors have academic appointments in appropriate departments of the university and function both as staff members of the center and as faculty members within the university. Persons who are involved in program activity within the center also function in a quasi staff relationship in that they make significant inputs into the direction and planning of program activity. These include faculty fellows of the center, as well as visiting associates from other educational institutions. At the present time the center has four faculty fellow appointments within the university and has sponsored five visiting associates for varying periods of time. Graduate students are also involved in program implementation on a part-time basis. For the most part these are students in behavioral science programs within the university.

F. The Center for the Teaching Professions has an advisory committee, appointed by the chancellor of the university, and made up of one representative from each school, college, and division of the university. This committee consists of thirteen persons and is chaired by the director of the center. The committee advises the center on programs and strategies of involvement within the Northwestern University, on both the Evanston and the Chicago campuses. The center is sponsoring teaching innovation projects in all of the divisions of the university represented by the advisory committee, and we are also involved in in-service programs designed to help teaching assistants and other Ph.D. candidates prepare for their teaching roles in higher education. The subjective judgment of the staff of the center is that

our relationships with departments, the administration, and other centers within the university, have been excellent to date. The School of Medicine, the Graduate School of Management, the School of Journalism, the School of Education, and the College of Arts and Sciences have been quite active in seeking out the services of the center for projects which they wish to implement. The director of the center has a faculty appointment as professor of education and psychology.

III. Activities

A. The commitments of staff time vary, dependent upon the particular projects which involve staff. The director's time is divided between administration and service. In addition, the director teaches two courses per year. The time of the program directors contains a greater commitment toward development and service activities and teaching. Priorities among the various areas of effort are determined largely on the basis of program commitments for the center. The staff of the center teach courses in the area of their discipline. The director is involved in teaching in the area of educational psychology. The center sponsors one course for teaching assistants on campus, E70 Seminar in College Teaching, which is listed in the *Graduate School Bulletin* as a general graduate course without departmental affiliation. In addition, the center sponsors a course on instructional design through course listing in the School of Education. The major concerns of the center represent a commitment to the development and evaluation of methods and techniques to help specialists—both through pre-service and in-service activities—to become more effective teachers. These methods and techniques involve such activities as micro-teaching, planning courses for self-paced learning, developing programmed learning materials, exploring various philosophies of teaching which are relevant to higher education, communicating to the university community about instructional innovation at Northwestern, and providing facilities for the creation of a media base for instruction. The target population for these activities has been principally faculty members at Northwestern University. In addition, the center interacts with teaching assistants on campus, with some public school personnel in the area, and with selected junior college districts in helping them plan curriculum change. During the present funding year, the center has received, in addition to the Kellogg support, monies from the Wieboldt Foundation for the development of a self-instructional program in evaluation, the Spencer Foundation for released time of faculty, the State of Illinois for workshop activities relating to the evaluation of programs for the gifted, and the State of Connecticut for evaluation activities relating to programs of special education.

B. Proposals for support activities usually originate with the initial interest of faculty or from within planning groups in departments. The major stimulus is person to person contact between staff of the center and interested faculty. The typical results are development of plans and procedures which are utilized in new ways of teaching a course, utilization of new materials in the classroom, and the development of new curriculum sequences to represent the changing nature of higher education. Copies of the center's newsletter can be obtained on request and represent a full description of the types of activities involving the center personnel. To date, information about the center

is disseminated, for the most part, to faculty and staff within Northwestern University. Beginning next year the dissemination procedure is to involve a wide selection of educational institutions in the suburban region. Increases in the geographic scope of dissemination will occur in future years. The dissemination of information about our programs has resulted in a substantial increase in center contacts with faculty and departments. The center acts upon new ideas by trying to help faculty and staff implement them when at all possible.

C. The services of the center are used principally by faculty members at Northwestern, graduate students who are involved in instruction, and other interested educational personnel in the immediate suburban area surrounding the center. The services are utilized by establishing contact with staff of the center. The incentives for use are financial support for this implementation of their plans for the improvement of teaching, the use of equipment which the center has available, and the recognition of their colleagues and students when these plans have proved to be successful.

D. The center has not been in operation long enough to assess long lasting results of its efforts. Our most effective activities have been individual support grants to faculty for teaching improvements, the availability of hardware for use in constructing media presentations, and the development of a communication network within the university to tell faculty and staff about creative teaching which is taking place within the university. Least effective have been our attempts to date to promote change in those few areas of the university where a perceived resistance to change is present. Our most effective activity has been in working with faculty, graduate students, and other professionals who seek out the services of the center. In some few instances in which the center has attempted to act positively as an intervention agent, we have been reminded of the often sited observation that, "changing a university is often times like trying to reorganize a cemetery."

E. The activities of the center are evaluated largely by the consumers of its services. We maintain close communication with individuals who are using these services to solicit their responses and suggestions for changes in our approach. For the six-year effort of the Kellogg grant, the ultimate evaluation is made by the board of the Kellogg Foundation in their reactions to the annual reports which are submitted to them. The major criterion for the success of the center will ultimately be the degree to which the Northwestern community accepts the center as a viable and useful component in the promotion of creativity in teaching.

IV. Problems

A. Our most pressing problem is the identification of full time staff members who have commitment to educational change and the personal skills necessary for working with faculty members and other professionals in helping these individuals conceptualize and implement change. We have found that Ph.D. preparation models emphasizing specialization in such areas as educational technology, educational psychology, administration, and curriculum development do not produce the type of generalist necessary to work effectively with a broad spectrum of university faculty in developing

strategies and techniques for instructional improvement. We have concluded that, relative to the objectives that we wish to accomplish, the personality of staff is as important as the educational background. Another pressing problem has been the limitations of space which we have in our present building. This, however, will be resolved in one more year when we move to our new facility.

B. Our most important needs at this time, and in the near future, are ones relating to the adequacy of staff. We find that competent staff tend to generate legitimate concerns for the center which must be responded to in terms of the addition of competent staff. Our concern is not with the size of staff, but with the availability of the type of individual who can relate effectively at a very human level to the problems and needs of teachers and at the same time possess the credentials necessary within the present system of higher education for the maintenance of a professional status as perceived by his academic colleagues.

New directions are needed to make the academic activities of the university more sensitive to individual needs. Can a university be justified if it does not consistently involve its constituency in the examination and improvement of its reason for existence—teaching and learning? The Center for the Teaching Professions represents one model for stimulating this kind of examination and improvement.

OFFICE OF EDUCATION DEVELOPMENT

College of Pharmacy, Ohio State University

DeLayne R. Hudspeth

I. Background and Institutional Climate

A. The Office of Educational Development, College of Pharmacy, at The Ohio State University was the result of an application to participate in the Health Professions Educational Improvement Program of the National Institute of Health. The RFP came out in mid-1969, and The Ohio State University received notification of the grant in June 1970. The project is to run for five years with the initial budget approved from July 1970 through June 1972. Funding for future years is tentative and dependent upon availability of funds. The initial budget was funded at $222,256 for a two-year period. The staff consists of a director, assistant director, three secretaries, and five research associates with a small sum for part-time help. In addition, there is a regular college appointment for a full-time faculty appointment in the area of evaluation.

B. A number of instructional support agencies existed at The Ohio State University before the College of Pharmacy began its program. These are typical audio-visual and communications services and do not deal with systematic improvement of instruction. Within the college, the only position relevant to the Office of Educational Development was a full-time person in instructional evaluation who had been on the staff one year prior to the formation of the Office of Educational Development.

C. Within The Ohio State University, there are very few institutionalized procedures for recognizing or providing visibility to good instruction. With respect to systematically improving teaching, The Ohio State University can best be described as a decentralized bureaucracy with all of the headaches this includes in terms of systematically improving instruction.

II. Structure and Function

A. As noted on the attached summary description, there are four major activities within the Office of Educational Development (OED). These are curriculum and program development, instructional development and support, educational research and evaluation and student recruitment. The objectives have not changed since the office was begun (about ten months ago), but working procedures have been modified slightly. The instructional support service has been well established within this ten-month period, but the production of instructional modules which can be self-contained are going somewhat more slowly than originally estimated. An additional function of the office is that of long-range forecasting and role identification in terms of changing roles for practicing pharmacists. This data is needed so that curriculum change may be soundly based. Additional funds have been requested for this activity.

B. The Office of Educational Development is located in the College of Pharmacy and reports directly to the dean. There are several advantages of this location; the major disadvantage is that the office is seen as an administrative rather than as an academic unit. Some time has been spent mediating between the goals and vision of the dean (who has national stature and obtains input from a variety of sources) and the faculty who tend to be more parochial in their instructional view.

C. The Office of Educational Development has a suite of three offices plus a large room for a secretarial pool and production. In addition, there are a number of other small rooms to house equipment and for specialized production facilities such as the offset press, CCTV, etc. The college has four classrooms, most of which are controlled by the college, and these are slowly being turned into specialized classrooms in that media system controls are built in.

D. Our agency is funded through the National Institute of Health. The office seeks outside funds for development and research projects. The present budget is $222,256 for a twenty-four-month budget period. This is broken into: personnel, $145,000; consultant services, $9,600; equipment, $22,250; supplies, $7,400; travel, $4,000; and other (including room renovation and computers) $34,000. We anticipate our budget will grow, but this depends upon the availability of funds.

E. We exist as a small college; therefore, the hierarchy of decision making is participatory. Chains of communication tend to be primary, particularly with the professional staff. All professional staff have Ph.D.'s either in sociology or educational media. There has been no staff turnover to date excepting in the research assistants. We employ students as part-time personnel and to run some equipment.

F. We consult with the academic departments in a variety of ways. Frequently problems will be generated by the faculty themselves, and our function is to provide them with instructional options, either one of which could solve the instructional problem. On occasion, we will sense a problem and prepare a proposal to deal with this problem. We rely heavily on the coffee pot and a sound service program to get faculty in the door to generate these instructional options.

III. Activities

A. It is estimated that total staff time includes administration, 20 percent; teaching, 0 percent; research and development, 40 percent; and service, 40 percent. We use the college faculty meeting to present new equipment or new systems such as the test scoring machine or the closed-circuit TV system.

B. Basic support services include CCTV, offset press, test scoring machine and computer analysis of test results, two by two and overhead transparency production, super-eight film clip production, and audio and slide-tape production. Increasing emphasis in using these support services is toward self-instruction materials. Dissemination about out operation is done both on a personal basis and through the national meetings.

C. All our faculty use our services, although our funding is such that we must place priority on undergraduate instruction. Students use this service

where it relates to undergraduate education such as materials for seminars, giving reports, etc.

D. The most important results of our services have been improved efficiency of students' time in learning content. Our most effective activity to date has been increasing the awareness of the faculty toward various instructional options. The shortest-lasting results have probably been in working on Pharmacy Day activities which is a one-shot recruitment activity. In terms of recruitment, we have a carefully developed evaluation system so that each recruitment activity is evaluated, and the results of these various activities are made available over time to determine which of them is most effective. "Effectiveness" for instructional development is viewed as both quantitative in terms of the increased materials and the quality of materials used as well as qualitative in terms of being able to deal with faculty in those areas in which values are well established.

E. The Office of Educational Development has an advisory council which views our activities. The person in charge of evaluating instructional effectiveness also has procedures which are constantly used. Evaluation is built into instructional projects.

IV. Problems

A. The biggest problem the office faces in terms of instructional improvement is that of any technology: we know more about building and designing improved instruction than we have acceptance for it in terms of faculty attitude. Systematically designed instruction also results in increased production time contrasted with user time which tends to be shorter. The problem with production is a constant tradeoff between the quick and dirty which can be accepted by the faculty because it is similar to established tradition and the production of materials based upon what we know about learning which take enormous amounts of time and energy.

B. The most important needs of this office at this time are production systems which can incorporate the procedures of instructional technology yet keep faculty (content specialist) time to a minimum.

SUMMARY DESCRIPTION

The overall goal of the Office of Educational Development is to implement a system of instructional development in the College of Pharmacy that will result in a significantly improved program of professional education for pharmacy students which could serve as a model for other schools. This activity involves the planning, development, implementation, and evaluation of educational change.

Description of Activities

A program of educational development involves a diversity of activities, each of which is a vital and necessary part contributing to the success of the entire process. These activities are grouped into: (1) curriculum and program development, (2) instructional development and support (3) educational research and evaluation, and (4) recruitment.

The rationale and specific activities of each area are:

1. Curriculum and program development. The major thrust of this activity is the development of a significantly improved, multi-track professional curriculum. This goal was established because the role of the pharmacist in health care is diversifying, and present educational efforts have not adequately kept pace with such change. This is evidenced by:

A. The amount of information in traditional subject matter areas has increased enormously and new subject matter areas are becoming increasingly important. This gives special importance to resolving the perennial issue of what and how much to teach.

B. The confusion and frustration of current students and recent graduates regarding the relationship of present curriculum requirements and their application in different types of practice. A number of educators have described this dilemma of the pharmacist in terms of being over-educated for traditional functions and under-educated for an expanded role.

C. As new and diverse roles for the pharmacist are delineated (e.g.: therapy advisor to physicans; personal health consultant to patients; bulk compounder in hospitals; drug therapy monitor on the ward), some means of specialized training for these roles is necessary *without* lengthening the professional program.

D. Optimal training requires better integration of subject matter areas that are presently over-compartmentalized, both horizontally and vertically.

2. Instructional development and support. Although curriculum development is essential, newly conceptualized programs cannot be developed and implemented optimally without attention to the specifics of instructional techniques and technology. Thus, this activity is concerned with the support system needed to plan, develop, and test appropriate instructional procedures. It includes the following specific activities:

A. Improvement of the instructional efficiency of existing programs by working with faculty to improve teaching practices, developing mediated teaching materials and modules of self-instruction, and improving feedback to the student so he knows when he is learning.

B. Development of alternative methods of instruction by comparing instructional media effectiveness, developing instructional cost structures and dynamics. This includes the design and application of new instructional materials and approaches and experimentaing with innovative materials and approaches, such as simulation materials for clinical courses and computer-assisted independent study. Special instructional materials and approaches will also be developed for the exceptional student (both for remedial and acceleration purposes).

3. Educational research and evaluation. A program of educational development such as the one being developed requires:

A. Data input to facilitate policy-making and decision-making in all areas.

B. Evaluative feedback for use in program modification.

For maximum effectiveness the educational research and evaluation function is established as a connected, yet independent arm of the operational system. Thus, this area operates *with* the Division of Educational Development, but it is responsible directly to the dean. This area has two main types of activity. The first of these is the establishment of a pharmacy data bank whose contents will be available not only to our own college, but to other schools and investigators having a use for such information. This data bank includes:

A. Comprehensive demographic, academic, attitudinal, and professional information about pre-pharmacy and pharmacy students at Ohio State.

B. Similar information about students at other Ohio schools (through the Ohio Council of Colleges of Pharmacy), the Big Ten (through the Committee on Institutional Cooperation), the region, and the nation.

C. Similar information of practicing pharmacists, beginning with OSU alumni and expanding coverage as time and resources permit.

D. Descriptive and, to the extent available, evaluative information about curricula, instructional methods and materials, and recruitment activities of other schools of pharmacy.

The second type of activity involved in this area is that of instructional evaluation. The process of evaluation is vital to educational development to determine payoffs and to provide feedback for analysis and modification. The evaluation process is built in instruction *from the start* in order that appropriate feedback may be constantly available.

4. Recruitment. Traditional and innovative programs are being developed for identifying and motivating potential students. This activity takes on increasing meaning as a multi-track curriculum is developed which requires and allows for differing abilities and interests among students. A wide variety of recruitment activities are being developed and tested; each recruitment activity is carefully documented and tested for relative effectiveness.

DIVISION OF INSTRUCTIONAL EXPERIMENTATION

University of Pittsburgh

Steele Gow, Dean

The Division of Instructional Experimentation was established at the University of Pittsburgh in 1969 with the mission of improving the quality of instruction and learning in the undergraduate and graduate arts and sciences and fourteen professional schools of the university. It is responsible through its dean to the provost and chancellor of the university.

The division is organized into an Office of Experimental Programs, (OEP), which is directed currently by Dean Steele Gow, and an Office of Measurement and Evaluation (OME), headed by Director Richard Cox. Current staffing of the division consists of seven faculty-level professionals, twenty non-faculty professionals, and five clerical persons, plus varying members of graduate student assistants and of faculty working part-time on projects. Including the division's responsibility for Arsenal Family and Children's Center and the Language Acquisition Institute as well as its OEP and OME, it administers university operating budgets of approximately $350,000 (with parts of some faculty-level staff salaries carried on departmental or school payrolls). In addition, grants support some of its projects.

The university's purpose in establishing the division directly under the provost was to provide a centralized source of stimulation and assistance for instructional experimentation throughout the university. It pursues this purpose in part by providing a haven where such experimentation can take place free of normal regulations and restraints of established line operations until an experiment's worth has been determined. However, it also works through the regular operating units of the university from the outset whenever feasible. And it provides a variety of forms of assistance and support to initiatives from schools, departments, and individual faculty members in its service role.

OFFICE OF EXPERIMENTAL PROGRAMS

The division's Office of Experimental Programs (OEP) seeks to improve instruction by three principal means. The first is to assist and support experimentation and innovation where it is initiated by others. The second is to initiate and stimulate experimentation, either by itself conducting the programs as long as they are experimental and then transferring them or by working through regularly established units of the university from the outset. And the third way is to analyze and plan strategies for adapting educational practices to societal needs. Examples of each will be summarized in the above order.

Assist and Support

1. The School of the Health Related Professions was assisted in the submission of a proposal to the U.S. Office of Education under the Education

Professions Development Act to become part of a national consortium of institutions testing different approaches to the training of child care and child development specialists. The program at Pitt, directed by Dr. Sara Arnaud, is funded at $250,000 a year currently.

2. The School of Education and the Learning Research and Development Center were assisted in the preparation of a design for training educational research, development and dissemination specialists. Directed by Drs. Glen Heathers and John Yeager, this has been funded by the U.S. Office of Education at $225,000 currently.

3. Professor Anthony J. Nitko was assisted financially in the development of an individualized course in Introductory Statistics: Educational Research 236. Assistance also was rendered, under the direction of Dr. Richard Cox, for the development of an experimental section of Educational Research 210, a large enrollment service course for the Elementary Education Intern Program. Both courses are operational.

4. The Sociology Department has been assisted in preliminary planning for the use of videotaped instructional materials for a large enrollment introductory undergraduate course. Planning continues.

5. The College of Arts and Sciences was assisted by Dr. Ray Hummel in developing a comprehensive design for extending and coordinating a Professional Opportunities Program of heretofore separate programs for educationally disadvantaged students from junior high school, through college, to professional school. The design is awaiting funding for implementation.

6. A non-testing means for evaluating the learning experience of a 1,000-student section of Life Sciences 80, as taught by Dr. Stanley Shoetak with a multi-media approach, was devised by Mrs. Leslie Salmon-Cox of the OEP staff and is being implemented at the request of the deans of the College and the Faculty of Arts and Sciences.

Initiate and Stimulate

1. In cooperation with the New Professionals Association, a New Careers Development Program was introduced in the College of Arts and Sciences and the Schools of Education and of Health Related Professions for economically disadvantaged persons employed as indigenous personnel by "war on poverty" human service agencies in the community. The students, predominantly black women, pursue baccalaureate degrees on a part-time basis, with full tuition remission from the university and with release time from their employing agencies. Special educational counseling and assistance is included. Credit for relevant work experience is awarded. Approximately 200 persons are enrolled at a time. The program is directed by George Johnston of the University-Community Education Programs office.

2. Partly as an outgrowth of the New Careers Development Program but mostly as a part of a proposed redesign of the graduate programs in social work, an undergraduate program in professional social work has been designed and is in the process of being reviewed by various university councils for introduction in September 1971. The OEP arranged the necessary faculty supplementation to permit the planning and designing of

the program within the School of Social Work. The designing has been directed by Mrs. Anne Jones.

3. For the Johnstown College of the university, the OEP commissioned geography Professor David Arey and a faculty committee to design a program in environmental studies, which would include a major as well as elective courses for non-majors. Because of an impending change of leadership at the Johnstown College, further formal steps toward implementation have been deferred temporarily.

4. At the suggestion of the chancellor, the OEP prepared a prospectus for a multi-college plan whereby the now single massive College of Arts and Sciences would be divided into three or more liberal arts colleges, each with its own distinctive style as to modes of instruction and learning, evaluation procedures and degrees of structuredness of program, with students choosing after a common term of orientation that style of college which best fits each one's needs and aspirations. While this has been circulated throughout the university for comment, further formal consideration has been deferred until after a new provost arrives later this year.

5. The OEP established a Language Acquisition Institute, under the direction of linguistics Professor Edward Anthony, to develop self-directing instructional materials and tutorial services, initially with emphasis on the uncommonly taught languages for which there are not established departments at this university. The initiative in this was taken by the OEP in response to a Faculty of Arts and Sciences decision to modify language requirements. Regular language departments also have been assisted financially in evaluating the programs which they have redesigned as a consequence of the same faculty decision. The institute has been operational for a year but is still expanding its tutorial staff and diversifying its instructional capabilities.

6. An Instructional Television Priorities Council was established to guide the ITV staff of the Educational Media Center of the university in selecting directions in which to develop the use of ITV in order both to improve the quality of education and to achieve maximum value from investment in the technology. This all-university council has approved a master plan of development and monitors decisions made periodically with respect to that plan. The council became fully operational during the budget-preparation process for fiscal 1971-72.

7. The Arsenal Family and Children's Center, a clinical training and research facility in normal child development in the Lawrenceville section of the city, was transferred this year from the School of Medicine, where it had been founded eighteen years ago by Dr. Benjamin Spock, to the OEP of the Division of Instructional Experimentation, in order to give it formally the all-university status which it had acquired over the years in providing clinical training for educators, nurses, social workers, child care and child development specialists, psychologists, and other professionals, as well as pediatricians and child psychiatrists. The Arsenal Center is in the process of being restructured in its staff organization and in its pattern of funding.

8. A system for accelerating the higher education of mature persons has

been introduced through the university's School of General Studies, employing College Level Examination Program (CLEP) tests and previously established university as well as national norms, so that advanced placement and credit toward degrees can be awarded for learning acquired outside the formal educational system. This also is intended to lay a foundation for expanded extension and external degree programs which are in early planning.

Analyze and Plan

1. The OEP has responsibility for the "Emerging Community Goals" project of the university's federally funded University-Urban Interface Program. A series of background papers have been commissioned, a community survey of "influentials" has been conducted, and related preparations made for a series of "little American assemblies" to be conducted next fall. The aim is to set in motion a process for anticipating new community goals so that the university and other institutions can prepare to respond more efficiently and effectively than they can under crisis pressures. Also involved is the design of a prototype Human Services Research Center, which is to become part of a cluster of community policy research institutes, in collaboration with other universities and other kinds of institutions in the community.

2. The OEP has provided staff assistance for the university's participation in the revision of the Pennsylvania State Master Plan for Education and in the Governor's Task Force on Human Services, as well as in such related organizations as Community Services of Pennsylvania.

OFFICE OF MEASUREMENT AND EVALUATION

The Division's Office of Measurement and Evaluation (OME) seeks to improve the quality of instruction and learning within the university by providing a centralized pool of measurement and evaluation expertise available to all schools and departments desiring its services. It operates through a Test Administration Service, a Test Scoring Service and a Consulting Service, the activities of which will be summarized in that order.

Test Administration Service

The OME uses the School and College Abilities Test (Form 2) to test the verbal mathematical skills of general studies applicants. By request of Admissions Director Dan Obara of general studies we have had thirteen administrations of this test since July 1, 1970, testing some 520 candidates in thirty proctor-hours of test administration. The tests are scored and the results made available to general studies within forty-eight hours of the time of administration.

The University Admissions Office requires our services to administer the College-Level Examination Program (four general examinations) to students wishing to transfer to Pitt. We offer the test once each month; our administration is open to any applicant who wishes to take the test to achieve advanced standing at any university. Since July 1, 1970 we have administered the test to some 400 applicants in fourteen half-days of testing, requiring some 315 proctor-hours of administration.

We provide national testing programs to Pitt students and to other applicants in the Pittsburgh area. We administer: Graduate Record Examination, CEEB Scholastic Aptitude Test and Achievement Tests,

Graduate School Foreign Language Test, Law School Admissions Test, National Security Agency Professional Qualification Tes:. Admission Test for Graduate Study in Business, National Teachers Examination, Professional Applicant Test Battery, Admission Tests for Schools of Nursing and Practical Nursing, Veterinary Admission Test, Certification Examinations for Medical Record Librarians and Ihalation Therapy Technicians, The American College Testing Program, and others on an irregular basis. Collectively we have had thirty-two such test administrations since July 1, 1970, providing a testing service for 62,000 candidates and more than 2,000 proctor-hours of administration.

We offer tests to candidates who are unable to report on the scheduled test day for religious reasons or because of physical handicaps. We have had six such special administrations since July, requiring thirty-six proctor-hours of administration.

We are responsible for administering the placement tests in foreign languages to incoming freshmen. We administered these tests to 410 candidates in two administrations (July and August 1970); the results of which were made available to the Advising Center of the university within two hours of the test administration.

Numerous ancillary office duties are required to maintain the above testing services.

For the College-Level Examination Program (taken by transfer students to Pitt) the OME makes all reservations, takes application forms and fees, completes the test rosters, and handles the ordering of test materials and their return to the publishers.

For all other tests, the office is responsible for the receipt and return of test materials, reservation of testing rooms, hiring of extra proctors for large administrations (as many as 1,100 candidates have been tested in one day), and a great deal of routine work essential for the smooth operation of one of the largest testing centers in the country.

For the large number of candidates who inqure about the national standardized test administrations, our office supplies literature to prospective candidates on a daily basis and routinely handles telephone inquiries pertaining to any of the numerous test administrations.

These ancillary office duties are an essential part of the testing service offered by OME to the students and prospective students of the University of Pittsburgh.

In addition, OME performs the following types of special testing:

—The Miller Analogies Test is a secure test published by the Psychological Corporation and is required by some graduate and professional schools as one criteria for admission. It is administered and supervised by OME staff members three times each week. Scoring, filing, and dispersion of test results to the individuals and institutions are also responsibilities of this office. Approximately 550 persons have been tested at OME from July 1, 1970 through January 31, 1971.

—On the first Friday of every month OME adminsters the General Examination to doctoral candidates from the School of Education. To date the test has been administered to 156 candidates. In order to facilitate interpretation of scores, OME has developed test norms based on the scores of

324 candidates who were tested from July 1969 to July 1970. Data from the General Examination were used in a study to determine the relationship between taking educational research courses and obtaining a passing score on that section of the General Examination.

-- several special administrations of the Doppelt Mathematical Reasoning Test are given during February to applicants for the Owens Fellowship. Approximately forty persons were tested in 1971.

Test Scoring Service

A total of sixty-four scoring requests were processed by OME during the fall term 1970. The following departments and or schools have used the service: (1) School of Education—General Exam; (2) School of Dentistry; (3) Psychology; (4) Biology; (5) Educational Psychology; (6) Educational Research; (7) Sociology; (8) Chemistry.

Each of the requests received test scoring service and item analysis and if requested, consultation, concerning the use of the item analysis for future test construction.

In addition to test scoring the service was used in the analysis of two questionnaires. These were submitted by the School of Engineering and the Student-Faculty Senate.

During the first month of the winter term 1971 a total of sixteen requests have been processed.

Consulting Service

OME provides a consultation service for faculty, students, and staff involved in research projects. Since September 1970 the office has received approximately eighty-seven formal requests for assistance with problems of research design, measurement, instrument selection, and statistical analysis. These requests have entailed approximately 117 hours of actual consultation time, not including the time needed to prepare for the individual needs.

The services have been used by faculty, staff, or students in the following areas:

Chancellor's Office—medical school, dental school, WPIC, Falk Clinic, UCEP, GSPIA, TTT, social work, psychology, sociology, biology, speech, and linguistics, and School of Education—counselor education, curriculum and supervision, educational communications, educational psychology, educational research, elementary education, higher education, IDEP, physical education, R and T center, reading and language arts, secondary education, and special education and rehabilitation.

Besides the services mentioned above, many informal requests concerning tests, scales, questionnaires, etc. are handled in the office on a daily basis.

Sample types of consulting projects are:

College of Arts and Sciences: Freshman Prologue Program—A model for evaluation was suggested to the committee writing a proposal for an innovative program to be available to entering Pitt students. Several meetings were attended to become informed of the project and clarify the evaluation desing.

School of Engineering: Course Evaluation—OME aided in the construction of a rating scale to be used by first and second year undergraduate

engineering students for evaluating their course. The ratings were made on IBM 1230 answer sheets and tabulated by this office. Subsequent analysis of results shall begin shortly.

School of General Studies: English 701-702—The Office of Measurement and Evaluation has been asked by a professor of English to assist in the evaluation of her 701-702 courses for students in the School of General Studies. OME recommended that the composition objectives be stated behaviorally in order to compare the differences between three pre-course samples of writing and three end-course samples of writing.

School of Health Related Professions: Physical Therapy—OME is presently in the process of working with the faculty of the Department of Physical Therapy on a number of projects. These include: (1) a new testing program for admissions purposes; (2) a curriculum evaluation form to be sent to recent graduates; and (3) a rating scale to be used to evaluate actual on-the-job performance of recent graduates. All of the above are active projects.

School of Education: Curriculum and Supervision—OME is working with one faculty and on staff member from the Curriculum and Supervision Department concerning a diagnostic instrument for teachers used by their department. A complete scoring and factor analysis procedure is being planned through the OME facilities.

Staff members from OME also are working with the faculty of curriculum and supervision on the construction of a data collection form for teacher evaluation schedules. These forms will be used with the IBM 1230 Optical Scanner to punch the data on cards.

Student Personnel Service—Members of the OME staff are presently working with the School of Education on the construction of an IBM form which will serve as a source of data collection instrument for many reports required by various sources. Information such as credits earned, major department, etc. will be included on this form. The form can be processed by the IBM 1230 Optical Scanner and the 534 Keypunch to allow the School of Education to set up quite an elaborate data bank.

Educational Communications—The Educational Communications Department is interested in developing a battery of admissions tests which would evaluate specific skills necessary in their field. A description of tests in several areas was developed and meetings held with department faculty to discuss choice of tests and implementation of a testing program.

Educational Research 210 Norm Study—Educational Research 210 is a service course covering the research areas of statistics, design, and measurement. An experimental section of this course is presently being developed in cooperation with the Elementary Education Intern Program. In connection with this program, a norm study has recently been completed for this course. The norm group consisted of 187 students comprising five sections of the course taught in the fall 1970. Midterm and final exams were administered during the course, and each test consisted of items corresponding to the areas of statistics, design, and measurement. By using the automatic scoring equipment, the OME developed separate subtest scores for the three areas on both midterm and final exams. After summing the appropriate subtests, BMD descriptive statistical routines were used to develop the desired norm data.

The same midterm and final exams were combined and given as a pretest to a group of eight-three elementary education intern students. Scores in each of the three areas were developed for these students by OME in the manner previously described for the norm group. These raw scores were then translated into letter grades based on the mean and standard deviation of the norm group. The letter grades are to be used to determine which students presently have mastery of a given area and which students require additional instruction and study.

The service provided by OME on this project is a good example of how the office may offer support in conducting major normative studies consisting of any subtests for other schools and departments throughout the University.

Hillman Library Inventory—Consultation and assistance with data analysis was given to members of the Hillman Library staff in conjunction with an inventory of books missing in the collection. Sample data was analyzed according to subject area and differences in percent mission between 1969 and 1970 tested for statistical significance.

Admissions Office: Transfer Student Admissions—OME has undertaken a study on the admissions data for transferring undergraduate students. The Admissions Office questions whether it is necessary to require that the College-Level Entrance Program examination be completed when other information such as high school rank, SAT scores, OPA, and number of credits earned are known. OME is analyzing data from the accepted and rejected candidates from 1968-1970 to answer the questions of the Admissions Office.

Outside the University: Albert Gallatin School District—Staff members from OME have met with and helped representatives from the Albert Gallatin School District to help them in constructing a testing program for their school district. Our staff outlined a number of steps that should be followed in setting up the program and also offered reviews of tests which seemed relevant to their purposes.

Bidwell Center—The Bidwell Center, a counseling and training center for disadvantaged youths, has asked this office to assist in administering, scoring, and interpreting the scores of the Flanagan Aptitude Classification Tests and the Differential Aptitude Tests for its trainees.

Hill District Employment Center—The Hill District Employment Center, which refers its clients to job openings, confronted this office with two problems that it hoped OME could help solve: (1) their applicants were failing personnel examinations due to lack of test-wiseness; and (2) their applicants were naive in interviewing techniques. OME prepared test materials similar to those used most often by local employers: The Wonderlic and The Flanagan Aptitude Classification Tests to be used in simulated testing situations by the personnel officer in order to increase test-wiseness and alleviate test-anxiety.

Industrial Personnel Selection—Staff members from OME met with Ralph Pennier of Pennier Corporation to assist him in the initiation of a testing program for small industries. He is the chairman of a committee organized to examine the feasibility of using standardized testing instruments as a screening and diagnostic tool in personnel hiring. Several paper and pencil and performance tests were suggested and reviewed with him, and advice given regarding considerations of personnel testing.

STANFORD CENTER FOR RESEARCH AND DEVELOPMENT IN TEACHING

School of Education, Stanford University

N.L. Gage and Bruce Harlow

I. Background and Institutional Climate

A. The Stanford Center for Research and Development in Teaching is one of a system of nine Educational Research and Development Centers funded by the U.S. Office of Education under the Cooperative Research Act (as amended by Title IV of the Elementary and Secondary Education Act of 1965). The program was organized by USOE in response to an increased national awareness of critical educational problems.

Upon learning of the enabling legislation, a group of faculty members in the Stanford University School of Education agreed to combine their scholarly interests in developing a proposal for a research and development center devoted to improving teaching in American Schools. A Proposal to Establish the Center was submitted in December 1964, and the center began operation in September 1965 with a staff of twelve faculty members aided by doctoral-candidate research assistants and other supporting staff. The USOE contribution to the center's budget for the initial ten months of operation was $349,625.

B. Before the center's inception, the Stanford University School of Education and its Secondary Teacher Education Program (STEP) constituted a major instructional improvement agency. Certain research opeerations within the School of Education and STEP were transferred to the new center, which began as and has remained a part of the School of Education.

C. Stanford has for some years given the Dinkelspiel Award to one faculty member and two students each year for distinguished achievement in undergraduate education. Being established this year are the Walter J. Gores Faculty Achievement Awards for excellence in teaching. For these awards, teaching "is understood in its broadest sense....." In the Mathematics Department, Professor Karel deLeeuw is administering an experimental program for improving the teaching methods of teaching assistants and other young faculty members. This program is supported by the Ford Foundation's Innovation Fund.

Student evaluation of teaching also goes on at Stanford. There is currently a voluntary program for faculty members seeking student evaluation of their undergraduate teaching and courses. A committee is investigating possible ways of formalizing this procedure. There are also established student evaluation programs in several of the professional schools.

II. Structure and Function

A. The center is concerned with the shortcomings of teaching in American schools; the ineffectiveness of many American teachers in promoting achievement of higher cognitive objectives, in engaging their students in the tasks of school learning, and, especially, in serving the needs of students from low-income areas. Of equal concern is the inadequancy of American schools as environments fostering the teacher's own motivations, skills, and professionalism.

Recognizing these problems, the center aims to improve the effectiveness of teachers in promoting the motivation of students, their achievement at the higher cognitive levels, and their realization of their potentials as persons, citizens, and producers. These objectives apply especially to students from low-income areas. They necessarily entail the improvement of schools as organizations fostering the development of an attractive and responsible profession of teaching.

The center employs the resources of the behavioral sciences—theoretical and methodological—in seeking and applying knowledge basic to achievement of its objectives. Analysis of the center's problem area has resulted in three programs: Heuristic Teaching, Teaching Students from Low-Income Areas, and the Environment for Teaching. Drawing primarily upon psychology and sociology, and also upon economics, political science, and anthropology, the center has formulated integrated programs of research, development, demonstration, and dissemination in these three areas. In the Heuristic Teaching area, the strategy is to develop a model teacher training system integrating components that dependably enhance teaching skill. In the program on Teaching Students from Low-Income Areas, the strategy is to develop materials and procedures for engaging and motivating such students and their teachers. In the program on Environment for Teaching, the strategy is to develop patterns of school organization and teacher evaluation that will help teachers function more professionally, at higher levels of morale and commitment. Instruments and other materials to accomplish these ends will also be developed by this program.

The long-range plan described above has evolved as a result of continuing internal and external review (see also II**E**.). In a major reorganization in April 1968, the center shifted from its original grouping of projects according to domains of variables to the present problem-oriented programmatic organization. An intensive self-examination in 1970 resulted in a tightened and sharpened focus and a clearer definition of the center's specific developmental goals. Projects which did not contribute directly to those goals were or are being phased out, and new projects were added.

Additional functions or objectives of the center should include greater activity at the level of higher and professional education, since the center has thus far been relatively inactive at these levels. These additional functions would include projects aimed at the improvement of teaching at Stanford and other colleges and universities.

B. The center is a part of the School of Education from which it receives full endorsement and some financial support. The implications and advantages of this location are that the center is governed by the school most concerned

with and competent in research and development in teaching, without being isolated from other departments and divisions of the university. This location has no disadvantages in the Stanford administrative and academic setting, especially in view of the abundance of cross-departmental and joint appointments in the departments contributing to the center's work.

C. The center's facilities are currently divided between two locations. The center rents three suites of offices in a small modern office building about a mile from the central Stanford campus. At present this space is divided into thirty-eight offices, cubicles, or work areas, including a conference room and a small library. Offices are provided for some research and development associates (defined below) and for certain members of the support services and administrative staff. Cubicles are allotted to the research assistants, all of whom are doctoral candidates. This space is used and controlled by the center exclusively. Equipment used in the present office space is limited to the usual office equipment; slide and film projectors and tape recorders; and the facilities of the Methodology Unit, which has two 2741 computer terminals rented from the Stanford Computation Center and an Olivetti Programma 101 desk-top computer. The Methodology Unit has access to the University Computation Center's 360/67 computer and makes use of its keypunch equipment. Other equipment from outside services may be used from time to time, such as the computer terminals of the institute for Mathematical Studies in the Social Sciences which were used by a center research project in a study of computer-assisted instruction.

Because of the center's location, a majority of the faculty R&D associates maintain their primary offices in the School of Education or the Department of Sociology on the main campus. The School of Education building also houses the center's Educational Media Unit which includes fixed and portable videotape recorders and playback monitors as well as conventional audiovisual equipment. This unit also provides audiovisual services to the School of Education under separate funding from the School.

Much of the center's research goes on in classrooms in the San Francisco Bay area; some has been carried out elsewhere in California and in other states. The summer Microteaching Clinic conducted by STEP for its intern teachers has also been a major site for SCRDT research and development.

The center has been greatly encouraged by the USOE's decision to grant Stanford nearly $4,000,000 toward the construction of a new educational research building under the provisions of the Educational Research Facilities Program. The new building, to be located on the main Stanford campus near the present School of Education, has been designed especially to implement the center's program and will be the focal point for all center activities. It will be a model laboratory equipped with the technology of the 1970's, including a sophisticated information processing system which will greatly enhance the center's research and development capabilities. The 60,000-square-foot facility, with net assignable space of 39,000 square feet, will provide opportunities for observing, recording, and reproducing the activities of students and teachers, using modern videotaping and electronic devices. Much of the recorded material will be tied to Stanford's central computer facilities.

The architects, Skidmore, Owings & Merrill, have translated the center's educational specifications into an attractive and workable building. Among its features will be a completely flexible research laboratory area of 3,500 square feet. This flexibility is established through the use of a five-foot module permitting arrangement of rooms with wall lengths in multiples of five feet, the smallest possible room being five feet by five feet. Each twenty-five-square foot division of this laboratory will have many electronic capabilities, i.e., provision for television camera and monitor, speakers, microphones, and, of course, electrical outlets for recorders and projectors. The building will also have a complete television film studio and a large-group instruction room seating 156, with a student-response system and provision for simultaneous translation. The information retrieval system to be installed throughout the building will have enough capabilities to remain electronically up to date for many years. There will be a twenty-carrel language laboratory area, a small library, and space for the Methodology Unit and the publication and dissemination operations. The building is planned to provide office space for all members of an expanded center staff, including research and development associates, technical and professional personnel, research assistants, and clerical staff. Construction of the building began on April 5, 1971, and occupancy will begin in the late fall 1972.

D. The center is funded largely from outside funds, i.e., those provided by the former Bureau of Research, now the National Center for Educational Research and Development (NCERD), of USOE under the program described under I.A. above. Stanford contributes to the center's support through the provision of some faculty time, office space, and various services. SCRDT has discretionary funds only in the sense that the center determines the desired allocation of funds in its budget requests to USOE; this allocation is subject to USOE approval.

The following statements on budget apply only to funds received from NCERD under its continuing contract with the center. Affiliated projects (projects directed by center staff members and having a direct relationship to center interests, but funded by separate, fixed-life grants from other divisions of USOE or from other sources) are not included.

The NCERD award to the center for the ten-month period (February 1-November 20, 1971) a period established to bring the fiscal year of the several R&D centers into concordance with that of the closely-related group of regional educational laboratories is $928,347. This amount is allocated as follows: 28 percent to the program on Heuristic Teaching, 22 percent to that on Teaching Students from Low-Income Areas, 12 percent to that on the Environment for Teaching (i.e., 62 percent for research and development), 21 percent for Support Services (the Methodology Unit, the Publications, Dissemination, and Media Unit, and the Advisory Panel), and 17 percent for administration, rent, general clerical staff, etc.

In its first full year of operation (July 1, 1966-June 30, 1967) the center received $809,701 from USOE. Over the next 2½ years (during which the fiscal year was changed by USOE, resulting in three separate budget proposals and awards), the center's USOE Budget remained essentially flat at slightly over $1,000,000 per twelve-month period. For the fiscal year February 1, 1970-January 31, 1971 the award was reduced to $928,150, reflecting the general stringency imposed upon USOE's R&D operations by the federal

budget. The ten-month award of $928,347 for FY 1971, cited above, represents an increase of approximately 20 percent on a per-month basis over that for the previous year.

E. The management of the center is shared by the director and the executive board. The director proposes policy, appointments, budget, etc.; the executive board adopts or approves such proposals; the director implements approved policies and actions and represents the center in its relations with USOE and other agencies; and the chairman of the executive board coordinates the review and planning of the research and development work of the various program components of the center. Both the director and the chairman of the executive board are appointed by the dean of the School of Education.

In addition to the above-named officers, the executive board is made up of the directors of the three major programs (see II.A.), appointed by the director; the director of STEP; a School of Education faculty member who is not on the center staff; the administrative manager; the coordinator of the Publications, Dissemination, and Media Unit; and a student member elected by the research assistants. The program directors, who are also R&D associates, make decisions involving the correlation and integration of projects within their areas, working in consultation with the other R&D associates who lead, administer, or otherwise participate in the research projects in their programs.

There are some seventeen R&D associates who are members of the Stanford faculty with sole or joint appointments in the School of Education or the departments of Economics, Linguistics, Psychology, and Sociology; all of these hold doctoral degrees. Three acting R&D associates, who assist the program directors as program coordinators, are completing their doctoral dissertations. Three additional R&D associates hold doctorates but do not have faculty appointments. Research assistants, who are present number twenty-eight, work part-time with the project leaders on the various research and development projects and are doctoral candidates in education and other departments.

The total center staff, including the above persons and members of the support services, administrative, and clerical staff, at the present time numbers seventy-six. In-service training is provided the research assistants in the course of their center work. Turnover is low among faculty R&D associates, relatively high among research assistants, most of whom leave the center after receiving their degrees, and probably about average for other personnel.

F. The center's relationships with other groups are varied. The Secondary Teacher Education Program (STEP) of the School of Education serves as a laboratory for some of the center's research projects. New approaches to teacher education and new hypotheses about teacher-student interaction have been examined through experimental studies, often videotaped, in which STEP teaching interns and supervisors collaborate with center researchers. The director of STEP is a center R&D associate.

Interaction with the Stanford community extends beyond the School of Education. As previously indicated, a number of R&D associates with

primary appointments in Education hold joint appointments in other departments, such as the departments of Psychology, Sociology, and Economics. Three R&D associates have sole appointments in the Department of Sociology. Members of the School of Law have cooperated with the project on educational community organization. There is substantial interaction with faculty of the Graduate School of Business. In addition, the usual informal interchanges between center R&D associates and other Stanford faculty, such as those in the institute for Communication Research, are stimulated by the Stanford environment.

Members of the center work closely with the Far West Laboratory for Educational Research and Development (Berkeley, California), most notably in a cooperative developmental effort involving the center's training studies project. The teacher training program at San Jose State College has contributed extensively to the center's research and development, as have cooperating schools in the San Francisco Bay area and elsewhere. Regional educational laboratories are represented on the center's advisory panel by the director of the Far West Laboratory. The director of the Stanford center serves on the Executive Panel of the Far West Laboratory and the National Advisory Panel of the ERIC Clearinghouse on Teacher Education; the acting director serves on the Board of Directors of the National Society for the Study of Education, the Research Advisory Committee of the American Council on Education and the Executive Committee of the Conference on Educational Development and Research and is a consultant to the International Association for the Evaluation of Educational Achievement.

III. Activities

A. Estimates of the proportion of R&D Associates' time spent in (1) administration would be 10 percent; (2) teaching, 40 percent; (3) research and development, 45 percent; and (4) service such as speeches, workshops, and consultation, 5 percent. Priorities among these four areas are determined by general university and academic norms and standards. Courses or seminars taught by the staff include a wide variety of courses in educational psychology and sociology, developmental psychology, counseling psychology, linguistics, statistics, economics, and educational and psychological measurement. The students are graduate students in education, sociology, and psychology.

The R&D project areas are: Program 03, Environment for Teaching—Organizational Change: A Political Theory of Educational Policy Formulation and The Teacher in the Authority Structure. Program 04, Teaching Students from Low-Income Areas—Educational Community Organization; Teacher Training: Standard English as a Second Dialect; Use of Small Groups in a Changing School; Small Group Interaction; Student Motivation and Engagement in Dyadic Learning Situations; Student Engagement in Low-Income Classroom Setting; Teacher Motivation, Commitment, and Engagement in Low-Income Classroom Settings; and An Econometric Model of School Effectiveness. Program 05, Training Studies; Microteaching and Intern Data Bank; Uncertainty Studies; Personal Competencies; and Effective Reinforcement for Achievement Behaviors in Disadvantaged Children.

The center's target population includes all those interested in improving teaching. Although center staff members frequently lecture on center activities, no consulting services are routinely available except those that arise in connection with center projects.

B-C. The stimulus for center activities represents a blend of the research and development interests of center professional staff and the needs of the educational community as expressed by USOE. Each year the center's program is reexamined and planned by the executive board in consultation with the other R&D associates and submitted for approval by USOE. The center receives and uses the advise of its national advisory panel and the USOE's staff and consultants.

Results consist of the generation of new knowledge through research and the development of products which can be used to improve teaching. Research results are presented in limited-distribution reports issued by the center and incorporated into the ERIC system, in journal articles, and in papers presented at meetings of professional societies. Developmental work thus far includes the following: (a) The center has refined the microteaching technique for teacher training originally developed at Stanford. Materials for such training, based upon further work done at the Far West Laboratory for Educational Research and Development and elsewhere, are now available from two commercial firms. Making use of information provided by Stanford and other sources, at least 40 percent of NCATE-accredited secondary teacher training institutions have used some form of microteaching in recent years. (b) Four books on methods of teaching foreign languages, using a modification of the microteaching concept, are now available from a commercial publisher. (c) A manual on teaching standard English as a second dialect has been developed and possible commercial publishing arrangements are being explored. (d) A number of research instruments have been developed. Targeted products currently under development in the three programs are identified in Section II.A.

Information about the center's research and development is disseminated in a variety of ways. Resumes of center reports are mailed to a selected list of potential readers in fields of education, who request copies of the materials in which they are interested; sometimes as many as fifty publications a day are mailed in response to such requests. An occasional newsletter, *Teaching*, presents information about center progress and is mailed to a much larger list including directors of teacher education in all NCATE-accredited institutions, chief state school officers, superintendents of large school districts, Title III centers, education editors, members of appropriate congressional committees, and a sizable number of individual educators. The center exchanges publications with the USOE's other R&D centers and regional educational laboratories. Many individual, unsolicited requests for information are received and answered. The center's annual report summarizes each year's work. Dissemination also takes place through journal articles and professional societies (as mentioned above), through speeches by center staff members, and through questionnaires and conferences.

Center professional staff members and their assistants use the normal academic sources as well as their own investigations to secure new information pertinent to their needs. New ideas are generated from such

sources; in particular, the results of center research often suggest new lines of attack. If these are considered promising and relevant to the center's program, they are incorporated in the planning for subsequent years.

D. The center's most important or long lasting results have consisted of developing and sharpening an analytic approach to research and development in teaching, exemplified in the publications of the Heuristic Teaching program, in microteaching, in the minicourses developed by the Far West Laboratory on the basis of microteaching, and in the plans for the model teacher training system now under development in the Heuristic Teaching program. One of the other two programs, on the Environment for Teaching, has laid the basis for promising new approaches to the long-standing problem of teacher evaluation and the reorganization of schools to promote greater professionalism in teaching. The third program, on Teaching Students from Low-Income Areas, has produced materials for helping teachers overcome the severe problem of such students in speaking standard English.

The most effective activities have taken the form of formulating and demonstrating new approaches, paradigms, models, and instruments, which are subsequently adopted widely by teacher education programs, research workers, and development organizations elsewhere in the nation (and in other countries).

The shortest lasting results have been the details of the findings of particular experiments or other studies. These are often modified as replications are carried out in new settings with new samples.

The least effective activities are those that are isolated efforts, unlinked to any broad and integrated program and unconnected with any concern for development, application, and dissemination. Several projects, since discontinued, have been ineffective in these ways. The explanation for these answers stems from the center's planning as to how its finite resources could best be used in integrated programs aimed at more sharply defined developmental targets.

E. The center's activities, products, and results are evaluated internally by the director and the executive board. A national advisory panel of distinguished educators is kept informed of center progress and, in yearly meetings with center staff, has provided candid and helpful advice. At intervals, usually connected with program planning and budget requests, the center is evaluated by visiting committees appointed by USOE, who transmit their findings to USOE, which forwards relevant information to the center. A crucial evaluation takes place each year when the Program Plan and Budget Request is developed and submitted to USOE, and a budget for the next fiscal year is determined by that agency. The ultimate evaluation, of course, comes from the center's constituency—the body of educators, including teacher trainers, who decide whether or not the center's knowledge and products can be used to improve student learning. The response thus far has been gratifying, but much remains to be done.

The ultimate criterion of effectiveness is impact through research and development on the improvement of teaching. More proximate criteria are promises of such impacts as judged by USOE and center staff and consultants and by colleagues in the field throughout the world. These criteria are used because they are in keeping with the mission of R&D centers as set by USOE.

The advantage of this approach is that it prevents the research from being divorced from real problems of teaching in American society. The disadvantage is that academicians sometimes feel constrained by the center's mission from pursuing intellectually attractive leads that may not pay off in improved teaching soon enough to justify center support.

IV. Problems

A. The center's current problems, in order of importance, are:

1. Obtaining funds sufficient to support the center's developmental efforts. Experience at Stanford and elsewhere has indicated that development is more expensive than research. Field testing, the use of large, real-life samples of subjects, and the development of materials in forms attractive and efficient enough to be used by teachers in the field, require larger funds than would be required by similar activities in a research setting. The center has attempted to solve this problem by making its program as much in keeping with USOE priorities and criteria as possible, in a way consistent with the intellectual standards and aspirations of its professional staff and faculty. The center has also furnished information to members of the Congress concerned with appropriations for the USOE's research and development programs. The center's director and acting director have worked together with the directors of the other R&D centers and the various regional laboratories in presenting an adequate portrayal of the scope of the center's activities and their impact on the improvement of teaching in American schools. The results of this effort in past years have been modest at best, inasmuch as congressional and USOE allocation of funds have not increased substantially.

2. Engendering full understanding of the center's mission among members of the university's faculty. This problem has arisen because of the emphasis on integration and development in the center. Integration requires collaboration, intellectually and otherwise, among university research workers; such required collaboration toward the attainment of common goals has not been part of the academic tradition. The center has tried to solve this problem through discussion, demonstration, and the communication of the concept of a center from the USOE through the center's administration to the center's professional staff. The results have been a marked improvement in such understanding over the years. The center's professional staff now clearly understands that the center is not a place where any faculty member may do independent work entirely of his own choosing. Rather, the center's professional staff realizes the necessity of conceptual, methodological, and logistical collaboration and coordination.

It has sometimes been difficult to imbue some members of the center's professional staff with an appreciation of the importance of a developmental orientation, i.e., an approach under which research is aimed at the development of products, procedures, and systems that will have general applicability in the improvement of teaching. This problem has arisen from that aspect of the academic tradition that values knowledge for its own sake without regard to any immediately visible or foreseeable practical benefit. It has also been attacked by communicating to, and discussing among, the center's professional staff the expectations and demands of American society, expressed through the U.S. Office of Education, for work that will meet the

urgent and pressing needs of American schools for improved teaching—needs that are reaching crisis proportions. The center's professional staff has responded to these communications with increased attention, in shaping its research and development efforts, to foreseeable practical value in improving teaching. The results of these attempts at solving these problems may be attributed to pressure from the U.S. Office of Education, the source of most of the center's funds, on the one hand, and to genuine appreciation of the validity of the needs for integrated and developmental work, on the other hand.

B. The center's most important needs at this time and the near future :

1. Increased funding.

2. Additional staff, especially an educational media generalist, to help prepare the center and its staff for the utilization of the sophisticated media systems to be installed in its new building.

3. Improved conceptual frameworks that will further integrate the center's programs and products and endow them with an even stronger developmental orientation that will result in more powerful products, procedures, and systems for the improvement of teaching.

CENTER FOR INSTRUCTION DEVELOPMENT

Syracuse University

Robert M. Diamond

I. Background and Institutional Climate

A. The center was formally established July 1, 1971 as part of a major effort of the institution to improve the quality and or efficiency of the academic program. With a full-time staff of thirty-eight and budget of approximately $450,000, the center provides both developmental and support functions on a university-wide basis.

B. Prior to the establishment of the Center for Instructional Development, another unit, the Center for Instructional Communication, had the development function and the responsibility for the academic program in instructional technology. With the establishment of the new center, the operation was phased out with all technical and production staff being incorporated into the new group and the AV service function being transferred to the library. The professional development and evaluation staffs are new to the institution.

C. The center will publish, as policy, a series of detailed reports on its experimental projects. The center is working in close cooperation with the academic deans, faculty, and university committees concerned with instruction and academic programs in the identification of concerns and priorities.

II. Structure and Function

A. The Center for Instructional Development, in close cooperation with the academic community, will support, select, generate, coordinate, and evaluate projects designed to improve the quality of instruction at the institution. These efforts are an integral part of an effort to emphasize the instructional function of the university. Emphasis is being placed on the complete redesign of courses and curricula, stressing individualization and independent study.

B. The center, headed by an assistant vice chancellor for instructional development, reports to and is within the Office of Vice Chancellor for Academic Affairs and Provost. The administrative location of the center is part of the overall effort to stress, university-wide, the improvement of instruction and appears to be successful. This also permits the input of developmental concerns at a relatively high level of administrative decision making.

C. All media production and maintenance functions, audio, video, film, graphics, photography, and equipment repair are within the center. The center will operate (as of September 1) an experimental multi-media 80 station Independent Learning Laboratory. The facility will be used for the development and evaluation of "structured" independent study modules that will be moved, when completed, to facilities in the library and to other campus locations.

D. All base funding is by the university as part of its regular budget. Outside funds will only be sought if they can be used to support projects that meet the priority needs of the institution. Discretionary funds, for both faculty release time and the purchase of related materials, equipment and supplies are available. These are used to support priority projects identified by the administration, academic departments and center staff. A faculty awards program is anticipated for 1972-73.

The present budget (1971-72) of approximately $450,000 is divided into the following broad categories: Development and Evaluation; Support Services, Graphics, Audio Production and Duplication, Video Production and Duplication, and Campus Services and AV equipment and maintenance; and University Film Center (serves also administrative functions).

E. The internal organization of the center, with function is found in the accompanying table.

F. Professional staff members have joint appointments with academic departments. As a university-wide unit, the center works closely with all units of the institution both administrative and academic. While primarily servicing as a resource and support agency, the center will use, whenever possible, the talents of specific faculty and departments.

III. Activities

A. The prime function of the center is instructional development. This area has, therefore, top priority. It can be anticipated that the proportion of total staff time will be approximately: administration (including production support for administrative agencies), 15 percent; teaching, 5 percent; R & D, 60 percent; and service 20 percent. Courses taught by the staff of the center will range from seminars in instructional development to formal courses in evaluation, music methods and media administration. Perhaps the major instructional impact will be in the training of Ph.D. candidates for the area of instructional development.

R & D Projects for 1971-72 (tentative)

1. A redesign of the freshman core curriculum, for the School of Art.

2. Individualizing the introductory course in mathematics for the non-math major.

3. The individualization of the introductory sequence in sociology.

4. The redesign of the curriculum in the School of Management including both the on-campus and external degree programs.

5. Electrical Science Laboratory (introductory course for students from the various disciplines).

B. All evaluation, including project design and the development, administration and interpretation of data is the responsibility of the associate director for research and evaluation. All projects will be evaluated on instructional performance (meeting prestated measurable objectives), efficiency and student attitudes toward both the subject area and the methods being employed. No disadvantages except that it takes time and money. Advantages are extensive.

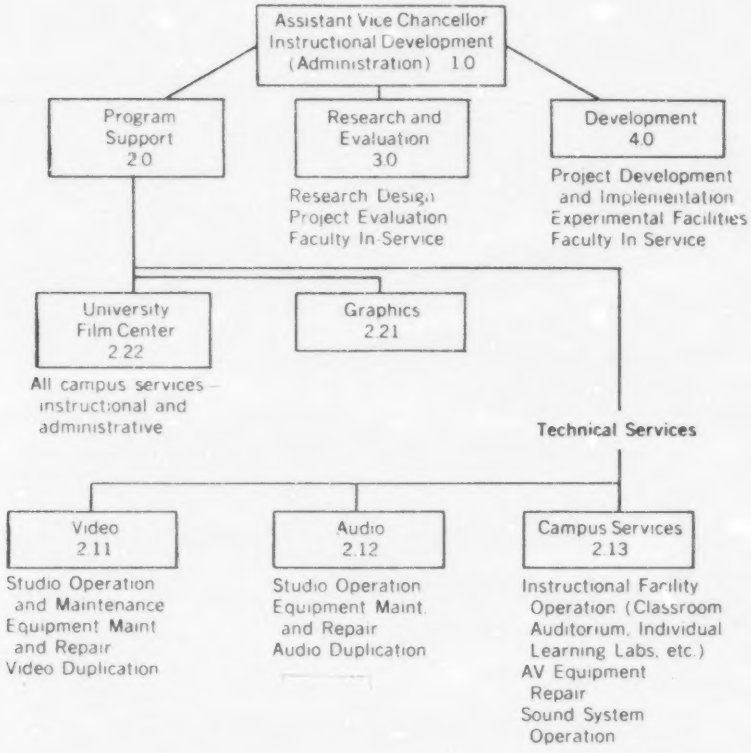
IV. Problems

A. Current problems—not too many yet. Give us time.

B. Quality instructional development requires time—time for development, time for field testing, and time for revision before final implementation. Thus, a development program will take several years before results are measurable. Unlike industry where R & D efforts are traditional, this approach may, under the present academic climate, take too long for many of those involved. Thus it is critical that the concepts and potentials of a development program be understood by students, faculty, and administration.

Center for Instructional Development

(Function Chart)



RESEARCH AND DEVELOPMENT CENTER FOR TEACHER EDUCATION

University of Texas, Austin

Gene E. Hall

I. Background and Institutional Climate

A. The Research and Development Center for Teacher Education has been in existence for over five years, having received its initial funding beginning with September 1, 1965. The R&D Center was established as a natural outgrowth of several projects which the director of the R&D Center and fellow researchers had been doing in the area of mental health in teacher education, dating back to 1955. The initial director of the R&D Center, Dr. Robert F. Peck, was the prineipal investigator in the earlier proposals which all dealt with the personalities of teachers and teacher education. The size of the staff and types of personnel employed by the R&D Center are presented in Table 1. An important difference between the R&D Center and many other instructional development agencies is that the target audience is other colleges and universities not solely the University of Texas at Austin. The R&D Center could be considered as an external instructional development agency.

B. There were many instructional improvement agencies and groups functioning at the University of Texas prior to the establishment of the Research and Development Center for Teacher Education. Several agencies which were directly related to activities which the R&D Center for Teacher Education would be undertaking were integrated into the program of the R&D Center. Some of the programs that were transferred to the R&D Center are:

The Personality Research Center. A Title III Project involving installation of Science—A Prochess Approach was placed under the R&D Center in collaboration with the Science Education Center.

The Cross-National Project, officially titled Coping Style and Achievement: A Cross-National Study of School Children. This project was funded independently under the Personality Research Center in 1965, and by 1968 it too was linked up operationally with the R&D Program though it continued to have its independent goals as well. In 1965 a number of other projects were brought into the R&D Center such as a bilingual program for the development of language skills in Spanish-speaking children through the use of science and mathematics and the Team Teaching Project. These agencies as the goals of the R&D Center became more precisely delineated.

C. Several mechanisms exist within the university as well as within the R&D Center as established institutionalized procedures for recognizing and providing visibility to good instruction. There are many teaching excellence awards, one of which a senior faculty member of the R&D Center just received for the 1971 academic year. Excellence in instruction is also recognized through consideration of raises and promotions each year by the

budget councils which are the budgetary decision-making bodies for each academic department. Although the specific weighting may vary from department to department, most budget councils state that at least one-third weighting is given to evidence of teaching performance. In an attempt to further encourage creative and more effective instruction, there are many opportunities for faculty both within and outside of the R&D Center to try experimental programs and instructional techniques.

II. Structure and Function

A. For the 1971 fiscal year the purpose, function, and goals of the R&D Center can best be summarized by quoting from the FY '71 program overview:

"Teacher education needs a personalizing, humanizing influence. Past work at this center has seen fragmentary progress toward the goal of developing products which will, when combined into a teacher education program. Result in more personally appropriate training of prospective teachers.

Teacher education modules have been developed for curriculum areas of science, mathematics, and social studies. Modules introducing teachers to team teaching techniques and organizational constraints have been developed. A teaching laboratory was created in order to provide neophytes with practical experiences in teaching strategies. Of critical importance were modules which provided a means for assessing teacher personality, concerns, and teaching behavior. Most significantly, the assessment tools were combined with techniques for constructively feeding this information back to the teacher and for using the information to plan personal education experiences for each student teacher.

The problem now lying before the center is one of organizing these materials under an administrative structure, developing or adapting new materials to complete that structure, evaluating the resulting program in field operations, and modifying the program. The structure has been titled The Personalized Teacher Education Program.

During FY '71, the Personalized Teacher Education (PTE) Program will have five major objectives:

1. To operationalize a full-year professional training program which incorporates all feasible modules and components previously developed by the center. The curriculum and school campus experience balance of the program will be sequenced according to the general findings from the teacher's concerns theory, and will be further individualized and personalized through psychological-behavioral feedback and consultation systems.

2. To complete development and testing of modules near completion (principally in mathematics, instructional design, and assessment) needed as components of the total instructional system.

3. To evaluate and modify the program as required to achieve an optimum balance of inputs from all curricular areas and other sources of expertise relevant to the teaching-learning process and environment.

4. To conduct an overall evaluation of the effects of the integrated program on students and on their teaching behavior and practices during student

teaching and during their first year of professional teaching.

5. To provide orientation, training, consultation, and other services required to effect installation of the PTE Program or its components in the field sites."

The objectives of the R&D Center have changed some since its inception six years ago. At first, due to the fact that many different and sometimes separate programs had been integrated under the R&D Center as well as many individuals coming together to form the R&D Center, the overall program, goals, and actual function of the center were not as clearly defined. As the R&D Center evolved, the goal has become more explicitly stated, that is, the development of a complete Personalized Teacher Education Program (PTEP). This entails the construction of curriculum-based modules, the assessment and counseling feedback strategies for integrating the various materials into an operational program, and strategies for installing the Personalized Teacher Education Program (PTEP) at other institutions as well as the development of strategies for aiding in-service teachers in personalizing their teaching. As the goals and directions of the R&D Center have become more exclusively defined and agreed upon, several projects have either been abandoned or transferred to other agencies since it became apparent that they no longer fit in with the main thrust of the center. As this program focus became defined, the staff of the R&D Center began functioning as a group and the program began to take shape more rapidly.

In terms of additional functions without additional funding it would be impossible to take on additional functions. The job which the center has taken on is much larger than resources permit and many components or aspects of personalized teacher education are having to be given second priority for the time being. The next objective in terms of priorities is the development of a five-year plan which is presently underway.

B. Administratively, the R&D Center is a part of the College of Education of the University of Texas at Austin. The R&D Center works directly with the dean of the college. Although the R&D Center is funded as an independent unit with many staff members who are full time with the center, most of the professional staff hold dual appointments with an academic department in the College of Education and the R&D Center.

Some of the advantages are: (1) Relatively close communication and two-way flow of ideas and practices between R&D and the College of Education Teacher Training Program in the university is possible. (2) In recruiting being able to give university faculty status due to the possibility of dual appointments is an advantage. (3) Communication with the activities of the university are more up to date as a result of having faculty members involved both in the center and in the academic departments.

Disadvantages: (1) Probably the most serious disadvantage is that of the divided lined of reporting which result from dual appointments. This sometimes leads to competitive demands from the R&D Center and the academic department on a person's time, energies, and dedication. It is not possible to get a person who is 100 percent dedicated to center production when he is also concerned about his teaching and departmental responsibilities. This can also effect the long-term chances of keeping a particular

individual since if he devotes too much time or places too much priority on one side of his appointment, the other side may become dissatisfied with his performance. (2) There is really a marked difference in the mission of an R&D Center and a university. An R&D Center is product oriented. It is essential to have efficient management and relatively rapid movement towards testing and dissemination of systems. This is very different from the slower paced and fragmented operations of a university. (3) Salary levels of faculty level people are not under control of the R&D Center but under existing university departments. This has not always resulted in adequate recognition or reward for people who have done good work in the R&D Center when decisions are made by others. We are presently taking steps to remedy this, but there are administrative complications.

C. The R&D Center facilities are located in one wing of one of the buildings which are assigned to the College of Education. At present the College of Education is located in five different buildings scattered across the extreme ends of the campus of the University of Texas. Plans are underway for construction of one large building which would house the College of Education. These plans call for moving into this building early in 1974; however, the R&D Center will still retain its present facilities which the center took over approximately 18 months ago. These facilities are under our direct control and for our exclusive use. A summary of facilities available to the R&D Center includes 19,876 square feet in the Education Annex (4,124 on the first floor, 9,416 on the second, and 6,336 on the third). In this area are twenty-six faculty offices (eleven by twelve feet), sixty mini offices (six by six feet) four conference rooms of various sizes, 2,400 square feet for data processing, and 1,600 square feet for video taping.

The equipment used by the R&D Center entails the usual collection of tape recorders, overhead projectors, movie projectors, etc. Our video taping facilities consist of professional quality two-inch Ampex with many of the faculty offices and the conference rooms being wired for video-tape playback and video tape recording. A professional crew is on hand for maintenance and operation of the video-tape equipment. In addition, there is a mobile video-tape van which can be sent directly to the classrooms in a school for the making of video tapes. We have just added a kinescope machine to our video-taping component thereby adding another capability.

The data processing division is centered around a PPP11-20 remote computer terminal. The terminal is connected to Control Data's largest computer, a series 6600, which is located on the university campus. The R&D terminal is complete with a card reader, printer, display console, and paper tape capabilities. Such a facility allows rapid processing of information on the 6600 in addition to permitting instant correction of computer programs. Also in conjunction with the remote terminal a wide variety of card processing machines is available, including lister, reproducer, sorter, and four key punches. The division is operated by a full time staff composed of statisticans, programmers, and key punch personnel.

D. The R&D Center is funded under Title IV of the Elementary, Secondary Education Act as one of the ten original research and development centers, nine of which were associated with major universities. The university does not support the R&D Center beyond $70,000 which was originally pledged

plus free computer services and a few other services; therefore, in terms of the goals of the R&D Center, its activities, and commitments, it is required to seek outside funds. At first the outside funding was limited to the Title IV Funds. Recently, however, additional funding has been sought through the U.S. Office of Education and the National Science Foundation, as well as private agencies. Over the years the budget has remained at an annual average of approximately $740,000.

The object categories for the center's budget are: personnel compensation; personnel benefits; travel and transportation of persons; transportation of things; rent, communications, and utilities; printing and reproduction; other services (equipment rental, conference expense, etc.), supplies and materials; equipment; and university overhead.

E. The internal organization of the R&D Center consists of an executive committee headed by the co-directors of the R&D Center which make primary program decisions with consultation from the national advisory panel and the heads of the local agencies involved: Texas Education Agency, Austin Independent School District, and the dean of the College of Education. Input on program decisions also comes from program staff who are working very closely with the area under consideration.

In terms of function, presently the R&D Center has two co-directors and six program areas with each area having a director or co-director who report to the center co-directors. Each of the programs have other professional and non-professional staff members. In terms of categorization, staff members at the R&D Center are either faculty, other professional, or non-professional. Faculty staff hold professional rank and dual appointments with a university department. In general they are program directors, organizational leaders, and program and product developers. Other professionals are personnel who are full time with the R&D Center, who may have Ph.D.'s or their equivalent and have responsibilities for program and product development as well. The non-professional staff consist of research assistants and secretarial and part-time help. There are no formal in-service training programs. Each new member of the staff is trained by his fellow workers and on-the-job training.

Staff turnover has not been a problem with most of the shifts in personnel being due to the phasing out of products during the early stages of development of the center or more recently with the completion of specific products and programs. The few additional turnovers which have occurred have been due to mutual agreement between the center and the individual that the goals of the center were not compatible with those of the individual. Both undergraduate and graduate students are employed in various aspects of the center's activities ranging from tabulation of data to making classroom observations and to providing inputs for the development of various programs and research activities.

The internal structure of the R&D Center as it has evolved is used because "we think it works." Our organizational chart tends to be vague and at times would appear to be undefined; however, we are involved in developing a Personalized Teacher Education Program and find that inhouse as well as with other institutions—it pays to be personalized rather than having firmly defined and observed lines of command.

F. The center consults very closely with academic departments and the administration of the College of Education, especially because of the interwoven nature of our staffing patterns. Our local experimental Personalized Teacher Education Program is operated with faculty from several departments within the College of Education. Our experimental undergraduate teacher education program is a multi-disciplinary team approach which requires faculty to work together which demands continual and open communication with the departments of the university both within and outside of the College of Education.

III. Activities

A. As far as the center goes, 10 percent of the staff time is devoted to administration and 90 percent for research and development. Teaching is conducted by all those faculty members who have joint appointments on the university campus.

A major part of the work is dissemination and field testing. Here we have a sizable proportion of time spent in workshops and consultations with adopting institutions. Perhaps as much as 20 percent of the total staff time is presently being spent in consulting with representatives from other universities and the holding workshops for personnel from other universities who are attempting to install portions of or the total Personalized Teacher Education Program. The R&D Center service activities are along two lines, one being to aid other universities and individual teacher educators in tooling up to utilize parts of the R&D Center Program and products. Another area where service plays a part is when individual members at the center work with inservice teachers utilizing various products of the R&D Center. The R&D Center members also cooperate with other educational agencies such as the Southwest Educational Development Laboratory, Texas Education Agency, Regional Service Centers, and the Austin Independent School District in the writing of joint proposals and collaborating with them in some of their activities.

B. The various activities of the Research and Development Center have been aimed toward the development of a total package for a Personalized Teacher Education Program. This is a long-term goal and at the present time only some of the various products have been produced and most of these in experimental editions. During its first five years of existence the center kept a "low profile" with the staff members devoting their time to the conceptualization and development of products which were tried on the University of Texas campus. Beginning approximately eighteen months ago, it was felt that enough of the Personalized Teacher Education Program had been successfully tried inhouse to merit its being field tested at other institutions. Up to this time the products of the R&D Center were relatively unknown around the country. With the coming age of the initial materials which were developed and the beginning of the search for field test sites, more and more people who may have already been aware of the R&D Center became highly interested in being involved in field test of the varied products and programs.

The dissemination of information was made through the usual USCE

channels, presentations at professional meetings, and publications by R&D Center staff, as well as personal contact with fellow professionals from around the country. The need to establish systematic field test and evaluation sites resulted in the organization of a new R&D Center program named the Inter-Institutional Program which is responsible for establishing collaborations with other institutions and then monitoring evaluation design and installation of the R&D Center products and programs at the collaborative institution. With all field test and evaluation sites, there must be recognized benefit for both institutions as well as the doing of the work connected with evaluation of the products and programs. In one way, these field test and evaluation efforts have served as a dissemination activity. There are now more institutions and individuals interested in utilization of the R&D Center products than can possibly be handled.

Besides the many research activities that are ongoing as a part of the program, the center is constantly searching for new information and ideas through both representation at professional meetings and from its collaborations with other institutions. These new ideas are then weighed and following evaluation may be integrated into the R&D program.

C. Individual faculty members and colleges which have teacher education programs utilize the products and programs developed by the R&D Center. At present, most of the materials are in experimental phases of development. In order for another institution or individual to use these materials, they must agree to work with the R&D Center in obtaining some formative and or summative evaluative information about the particular product or products being used. The incentives for using the R&D Center program are several, including the fact that many professionals around the country find the products and programs developed at the R&D Center to be highly relevant, valuable, and in the direction that they see their teacher education programs going. Between the printed materials and faculty expertise in their teacher education program which might not otherwise be possible. Another incentive for institutions to collaborate with the R&D Center is the many resources which the center has which can be tapped to aid in the improvement of their teacher education program.

D. The most important and long-lasting results of the activities of the R&D Center are the strategies and procedures which have been developed for personalizing a teacher education program. Personalizing in the sense of developing skills in individuals faculty teams who can then work with pre-service teachers in a personalized education experience.

The other part of the personalization picture which has been development of strategies for working with in-service teachers and school buildings to aid faculty in developing personalized skills in working with children.

Presently, our most effective activities are our presentations at professional meetings and our work with other institutions in collaborative efforts which have aided others in developing personalization techniques. Probably our least effective activities have been our attempts to be effective in changing the larger more "publish or perish" oriented universities, including our own. At larger universities, there is still a tremendous amount of concern for publishing and concommitantly less concern for quality teaching. A Per-

sonalized Teacher Education Program requires more time of a faculty, and therefore less time for publishing which faculty members at a university cannot always afford.

E. Evaluation of products is carried out by first the Executive Committee of the R&D Center with the policy and planning board and national consultants. Second, the U.S. Office of Education has a system of annual site reviews and evaluation of products by outside panels.

The U.S. Office of Education Bureau of Research has established criteria for evaluating R&D centers. The criteria are grouped under three headings: I, Program Criteria; II, Organizational and Procedural Criteria; and III, Summary Statement and Recommendation. The following criteria are rated by the site visit team in terms of both a quantitative score and one to two-paragraph statement. Each of the criteria with the exception of personnel are evaluated in terms of past accomplishments and future potential.

These criteria are: I. Under Program Criteria--A. The Focus of the Center, B. Research Activities, C. Development Activities, D. Dissemination, E. Program Balance and Integration, and F. Economic Efficiency. II. Under Organizational and Procedual Criteria—G. Relationships with other institutions and Programs, H. University Support, I. Personnel, J. Program Planning and Evaluation, and K. Management. III. Summary Statement and Recommendations.

In the past five years, in terms of advantages and disadvantages of this approach, there had been far too much outside inspection too frequently; however, this is settling down now. In addition the office of education has learned to evolve more continuity in review panel membership. They are slowly developing some settled policies for planning and budgeting—certainly all these outside critics have been extremely helpful in improving efficiency and clarity of focus of an operation.

The inhouse formative and summative evaluation of products and programs is monitored by the Inter-Institutional Program via the collaborative efforts with other institutions. Evaluation studies are designed and done by this program. At the completion of an evaluation study an inhouse report of the findings are published for use by the product developer and in further development of the materials.

IV. The Problems

A. There has not been anywhere near enough money to man, and therefore develop the comprehensive program which is the ultimate objective, so whole areas are not even started. These include some of our curriculum subject areas, including the development of curriculum-based modules in reading language arts.

A problem earlier in the development of the center was the matter of communication between various of the programs and staff members since they were housed in four or five different buildings around the campus. This displacement costs tremendously in terms of both dollars and staff time. However, this problem has been alleviated now with the center being united in its own facilities. This unification has not only increased communication and production time, but has also resulted in the members of the center having a more common and integrated view of the functions and goals of the center.

The center does not have any other particularly severe problem at this time other than a shortage of funds to pursue all the various aspects that are involved in developing the goals of the center. The most important need at this time and for the near future is the identification of potential personnel to add to the center to complement and augment the activities of the center. Although there are large numbers of people searching for opportunities in the areas of teacher education, evaluation, systems, organization, higher education, etc., it is still difficult to find people who can fit into on-going projects and who can work as a member of a team rather than "doing their own thing."

TABLE 1

NUMBER AND TYPES OF PERSONNEL

	Faculty		Other Personnel		Non Professional		Total	
	Positions	FTE[1]	Positions	FTE[1]	Positions	FTE[1]	Positions	FTE[1]
FY 68	48	14.9	30	14.7	126	100.2	201	129.8
FY 69	46	8.4	17	11.5	100	56.1	163	76.0
FY 70	21	8.0	12	9.1	53	38.2	86	55.3
FY 71	22	7.94	22	17.38	58	35.91	102	61.23

FTE[1] = Full time equivalents.

Note: The figures are only presented for the more recent years of the R&D Center, the further back in history one goes the less precise the information is as to how many people were involved in the various projects. It should be noted that one should be careful when studying Table 1 because many individuals spent a fraction of their time assigned to several different projects, although they account for only one position.